

2008

Rack Server Virtualization

A Microsoft Office Visio 2007 Add-In
Implementation



Contents

| | |
|--|-----------|
| 1. Introduction | 3 |
| 2. Installation Overview | 3 |
| 2.1 Permission to run Setup.exe | 3 |
| 2.2 Software Prerequisites | 3 |
| 2.3 Installing the Prerequisites | 4 |
| 2.4 Installation Flow | 5 |
| 3. Getting Started | 11 |
| 3.1 Selecting/Opening the Rack Server Virtualization Template | 11 |
| 3.2 Import Data | 14 |
| 3.2.1 Selecting the Microsoft Office Excel Workbook | 15 |
| 3.2.2 Using the Microsoft Office Excel Template | 20 |
| 3.2.3 Using the Manual Wizard | 23 |
| 3.3 View Rack Details | 28 |
| 3.4 Configuration | 31 |
| 3.5 Analyze | 35 |
| 3.6 Virtualization | 37 |
| 4. Consolidation Criteria | 41 |
| 5. Legend Definition | 42 |
| 6. Troubleshooting | 43 |
| 6.1 Error while Importing Data | 43 |
| 6.2 Error while Diagram Generation | 44 |
| 6.3 Error while Analyze | 46 |
| 6.4 Error while Virtualize | 49 |
| 6.5 Error while Exporting Data Grid data to Excel | 50 |

1. Introduction

A Microsoft Office Visio 2007 Add-in Implementation.

Microsoft Visio 2007 Add-in for Rack Server Virtualization (Virtualization) uses various new features of Visio 2007 to display the details of servers, racks and colors present in the Data Centre. This add-in enables consolidation of physical servers by allowing many virtual servers to run concurrently on one physical server results in improvement of system utilization, reduction in number of physical servers, lowering costs, increasing flexibility etc. The Visio 2007 Add-in provides users a virtualization picture in addition to the existing picture of the rack based on some parameters to compare the power consumption and space saving before and after consolidation.

2. Installation Overview

2.1 Permission to run Setup.exe

Permissions required to run Setup.exe

| Permissions needed | Description |
|-----------------------------------|---|
| Local Administrator on the Server | Required for - invoke the Setup.exe - read/write registry |

Table 1: Permissions for Installation

2.2 Software Prerequisites

1. .NET Framework 2.0
2. .NET Framework 3.0
3. Microsoft Office Visio 2007 Professional

2.3 Installing the Prerequisites

1. .NET Framework 2.0

Download and install the **.NET framework 2.0** from

<http://msdn2.microsoft.com/en-us/netframework/aa731542.aspx>

2. .NET Framework 3.0

Download and install the **.NET framework 3.0** from

<http://www.microsoft.com/downloads/details.aspx?FamilyID=10CC340B-F857-4A14-83F5-25634C3BF043&displaylang=en>

3. Microsoft Office Visio 2007 Professional

The system should have the **Microsoft Office Visio 2007 Professional** installed.

2.4 Installation Flow

The Setup.exe installs the Visio Add-in for Rack Server Virtualization as an Add-In on the machine.

1. Run the Setup.exe/RackServerVirtualization.msi.
2. The Welcome screen appears.

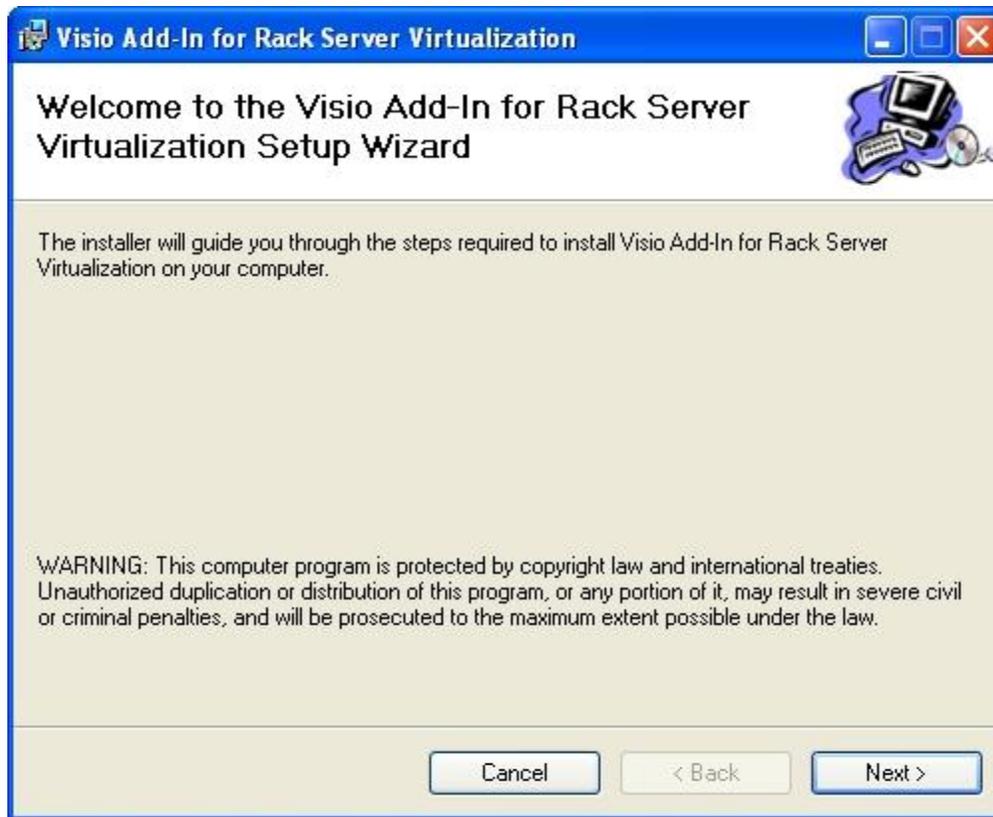


Figure 1: Welcome Screen

3. Click **Next** to continue.
4. The License Agreement screen appears.

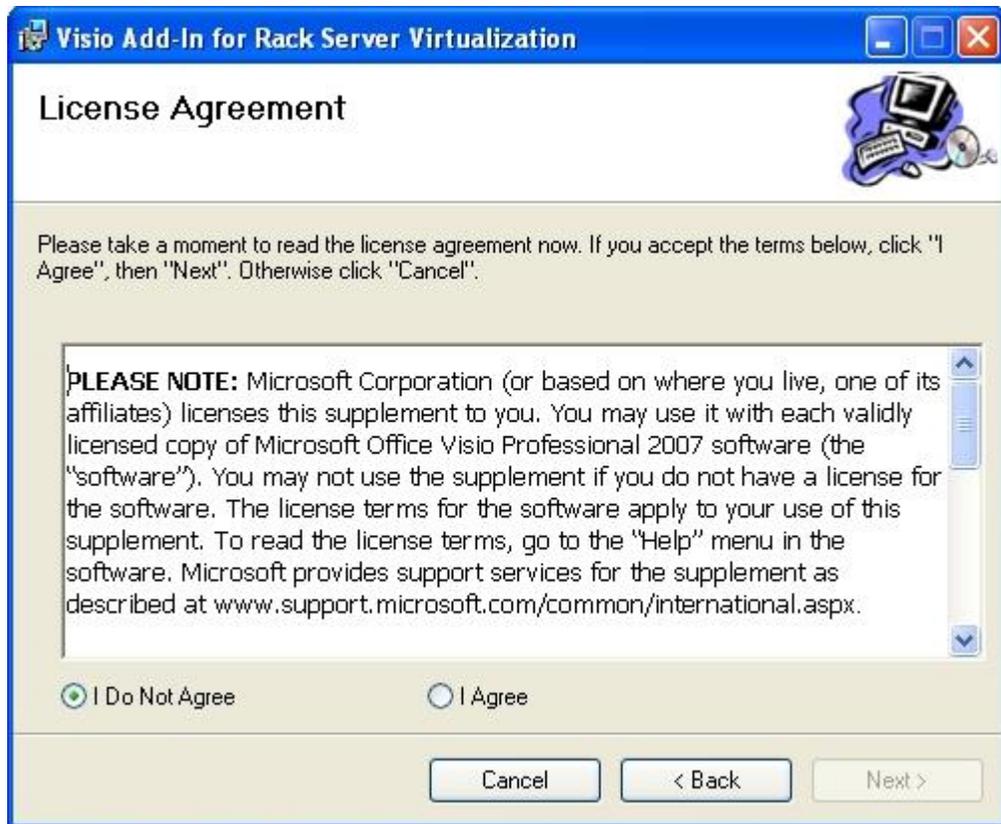


Figure 2: License Agreement

5. If you accept the terms, click **I Agree**, and then click **Next**.
6. The Setup Installation Path and Disk Space Information screen appears.

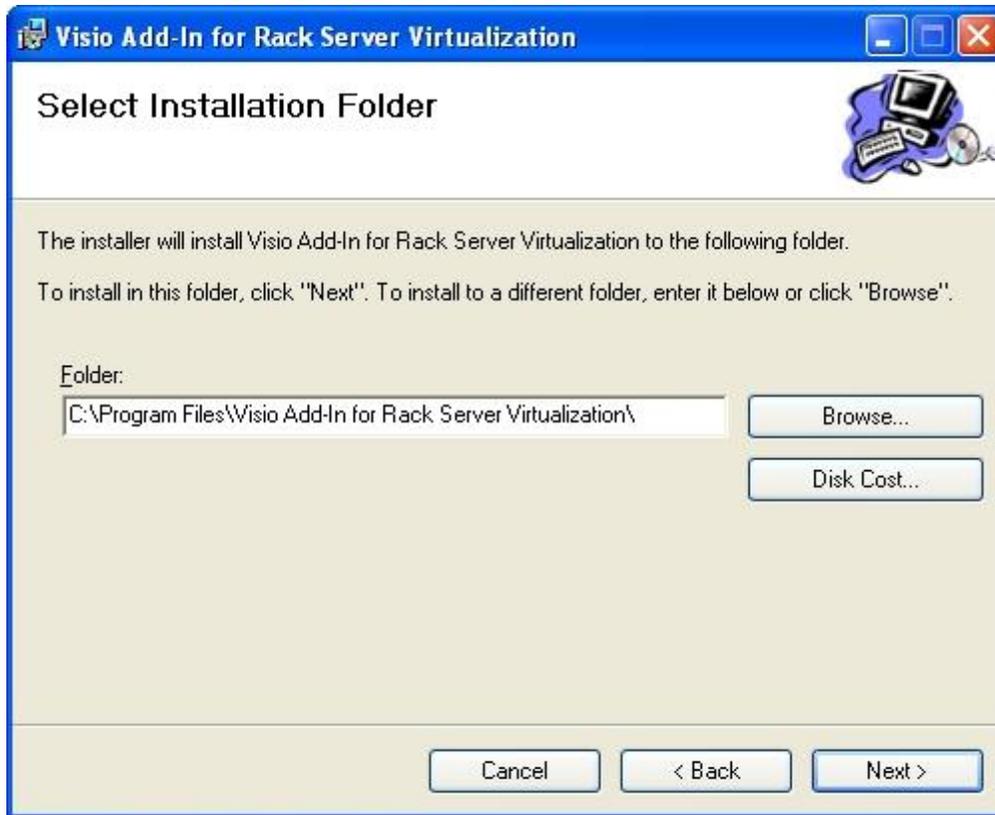


Figure 3: Set Up Installation Path and Disk Space Information

- Click **Next**, for the default path or click **Browse** to select the destination folder path.
- To check the Disk Space Required, click **Disk Cost**.

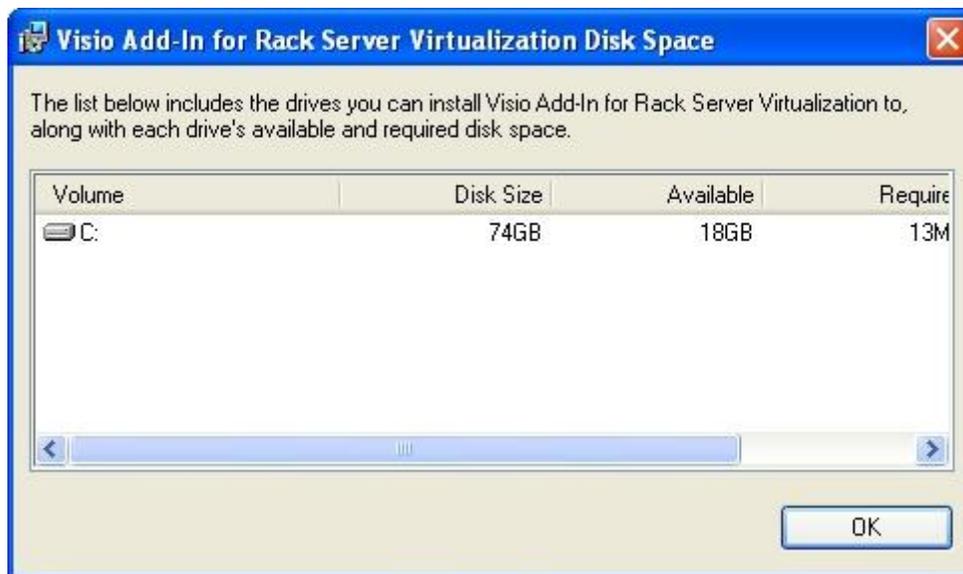


Figure 4: Rack Server Virtualization Add-in Disk Space

7. Click **Next** to continue.
8. The Confirm Installation screen appears.
9. Click **Next** to begin installation or **Cancel** to exit the setup wizard

Note: If you want make any changes to the installation settings or go back to the previous pages, click **Back**.

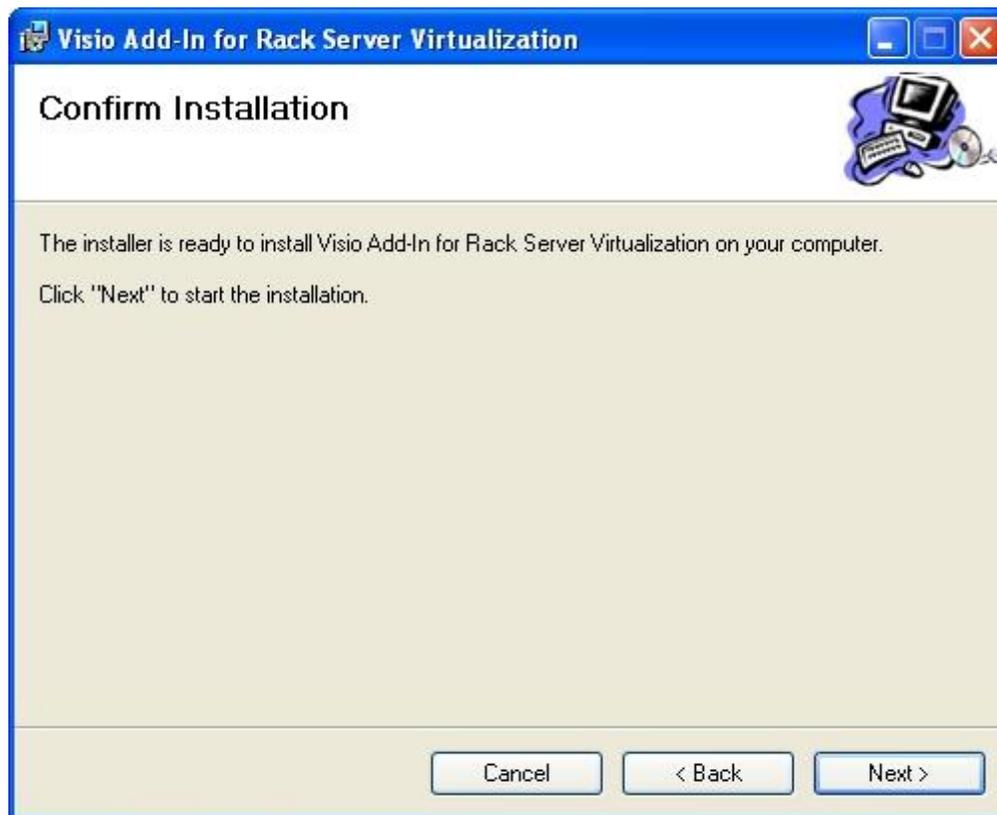


Figure 5: Confirm Installation

10. Installing Rack Server Virtualization Add-in screen appears.

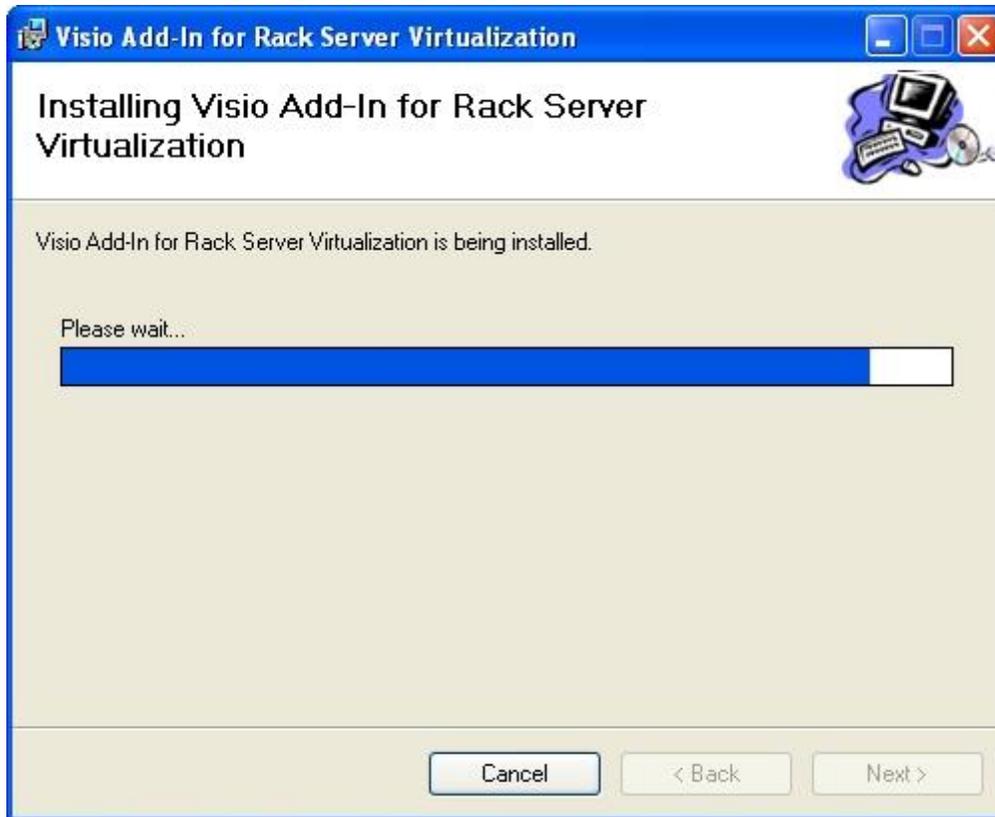


Figure 6: Installing Rack Server Virtualization Add-in

Note: Please wait while the setup wizard installs Rack Server Virtualization Add-in. This may take few minutes. The installation bar is displayed.

To cancel the installation click **Cancel**

11. Once the installation is successful the **Installation Complete** screen appears.

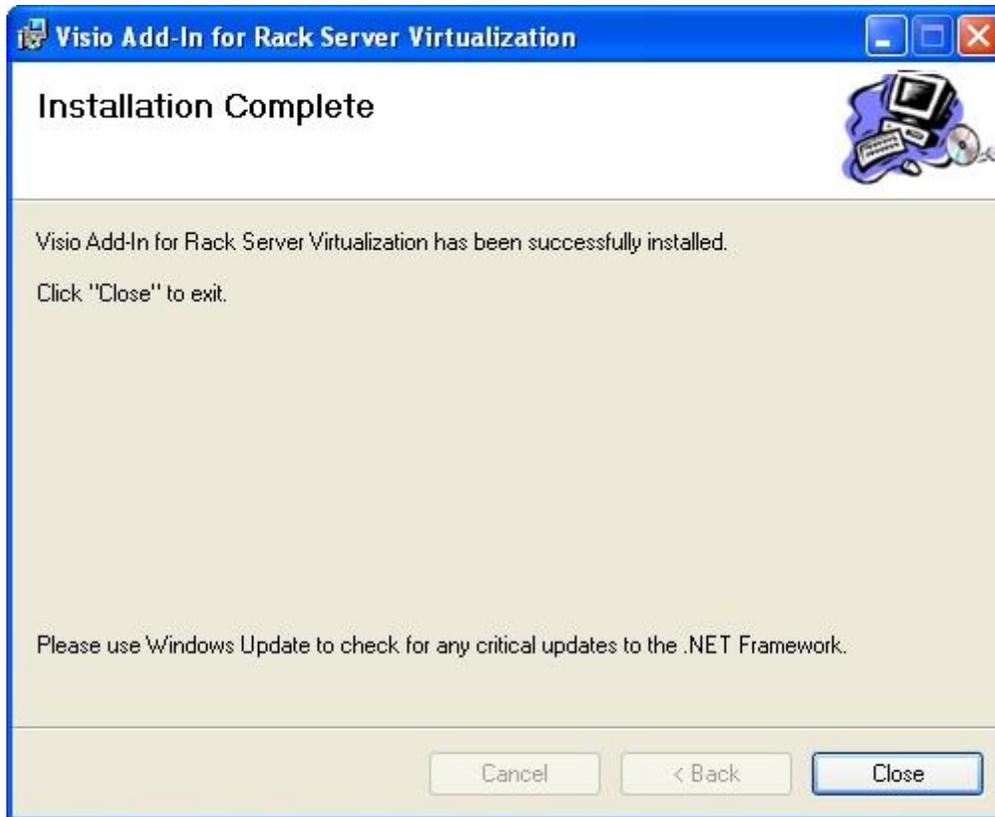


Figure 7: Installation Complete

3. Getting Started

1. This section describes the basic flow of the reference implementation.
2. The Microsoft Office Visio 2007 Add-in for Rack Server Virtualization is a COM Add-In that starts up automatically with Visio 2007.

3.1 Selecting/Opening the Rack Server Virtualization Template

The Add-In when installed adds a new template **Rack Server Virtualization** under **Add-ins** Templates Category.

3. Open Visio 2007, from **File**, select **New** and the **Getting Started**.

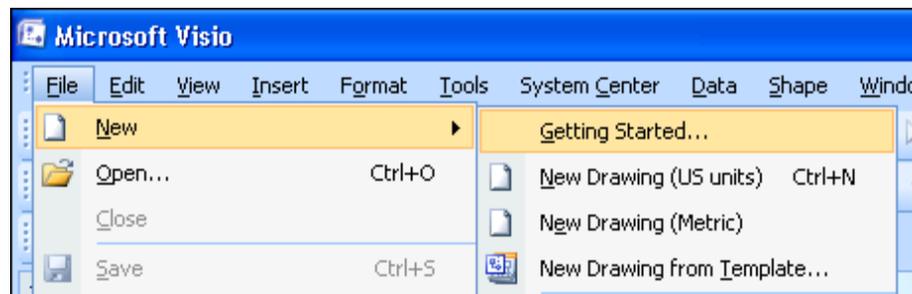


Figure 8: Getting Started

4. Select **Add-ins** from the **Template Categories** list from the left pane.
5. Select **Rack Server Virtualization** from the **Featured Templates** group.
6. Click on **Create** button.

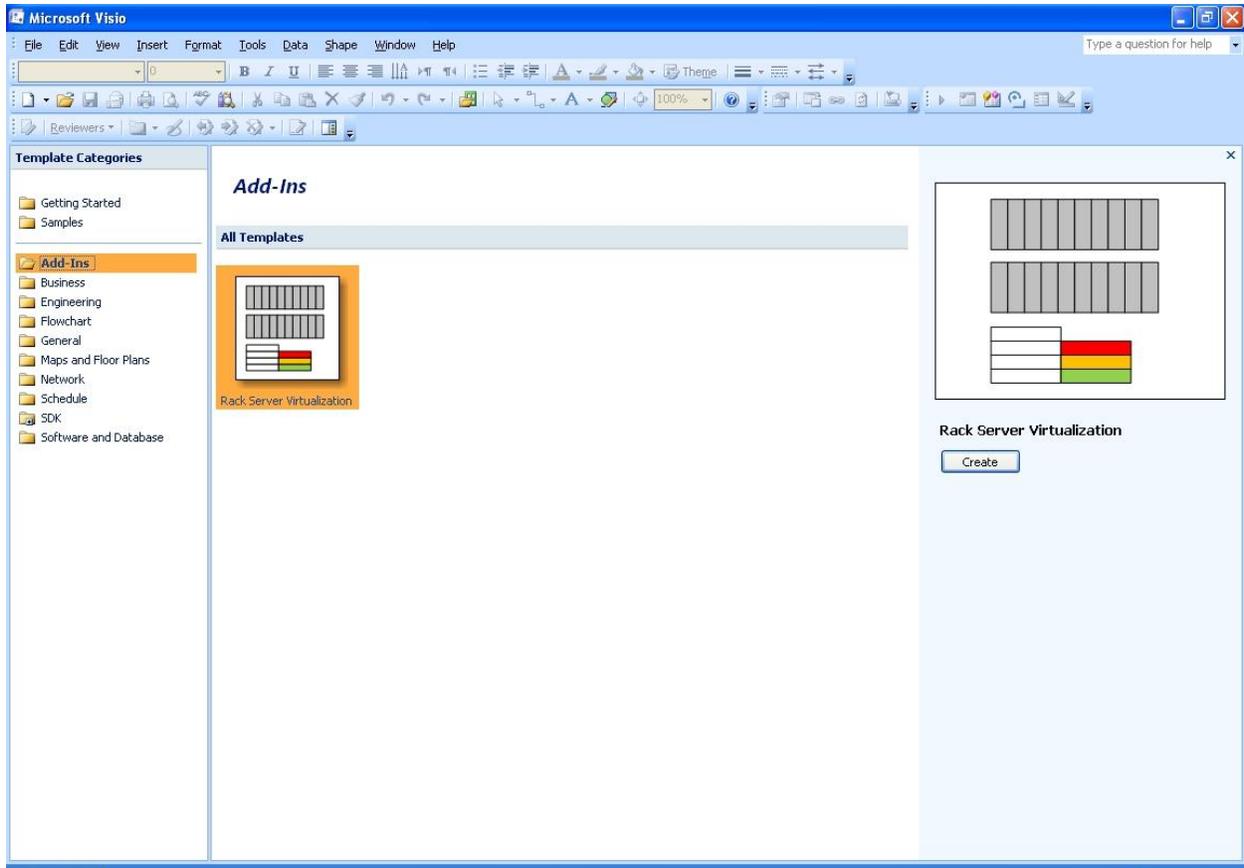


Figure 9: Selecting the template

7. A new menu Virtualization and toolbar Virtualization is added as the template opens a new document. A stencil Rack Server Virtualization consists of predefined shapes to show Rack Server Virtualization diagram will be also be opened.

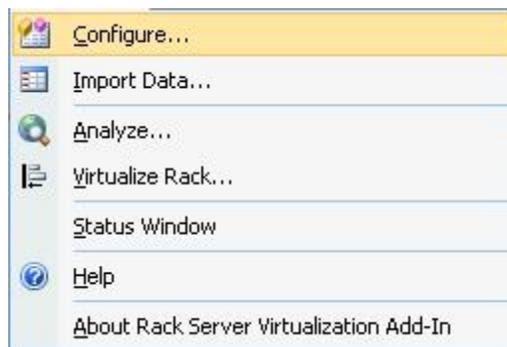


Figure 10: Virtualization Menu



Figure 11: Virtualization Add-in Toolbar

Also, Import wizard dialog of the Add-in will be open. This wizard provides different modes of including the data into the Add-in. The wizard can also be open from **Virtualization** menu or toolbar.

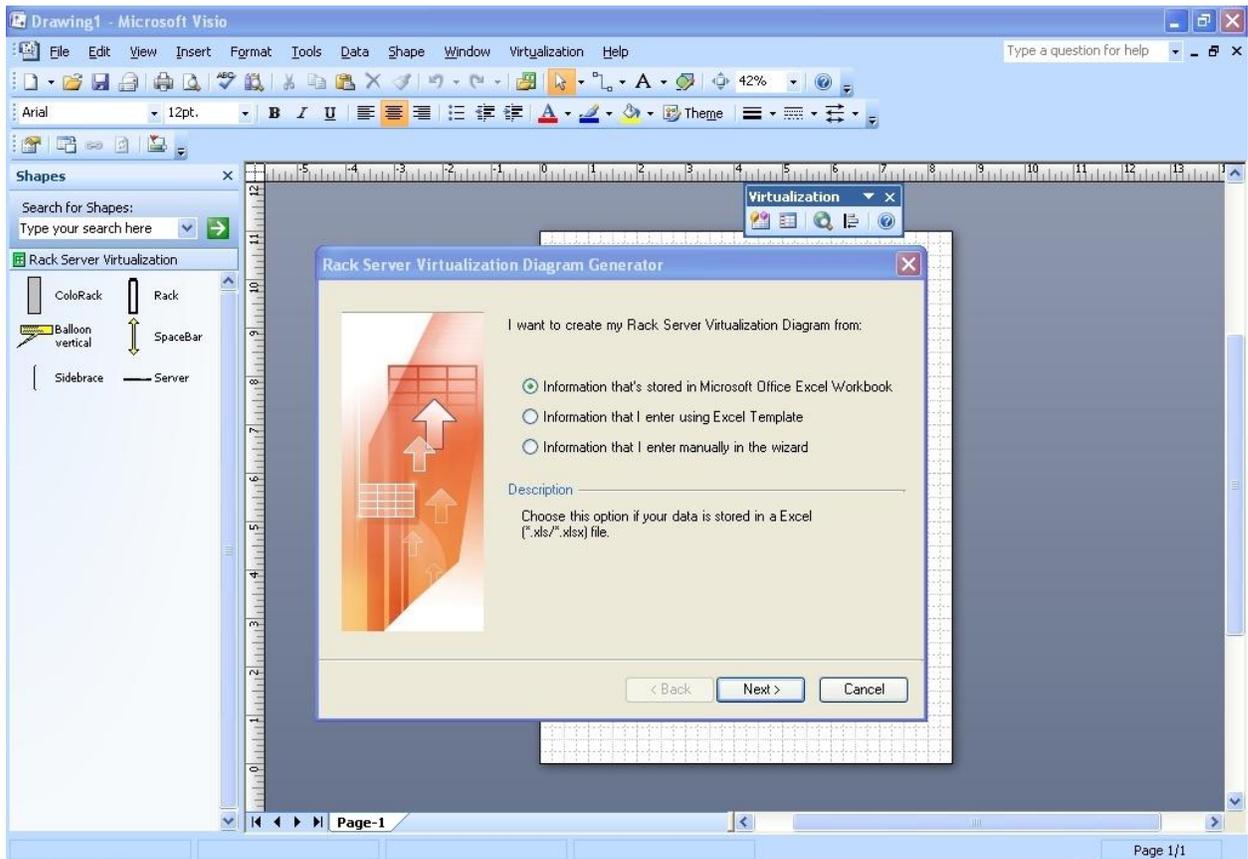


Figure 12: Import Wizard, Virtualization Add-in & Menu On Load.

The **Virtualization** menu consists of the following menu items –

- Configure – To configure CPU utilization and logon credentials.
- Import Data – To import data for analyze through various means.
- Analyze – To retrieve server, rack and colo data.
- Virtualize Rack– To virtualize the existing rack servers depending on CPU usage, power rating etc.
- Status Window – To see the status of Analyze.
- Help – User Guide for Visio Add-in for Rack Server Virtualization.

- About – About Virtualization Add-In

3.2 Import Data

To create the Rack Server Virtualization diagram following are the Import Options:

1. Import data from a Microsoft Office Excel Workbook.
2. Use the Microsoft Excel Sample Template to provide the data.
3. Manual entry of data using the wizard.

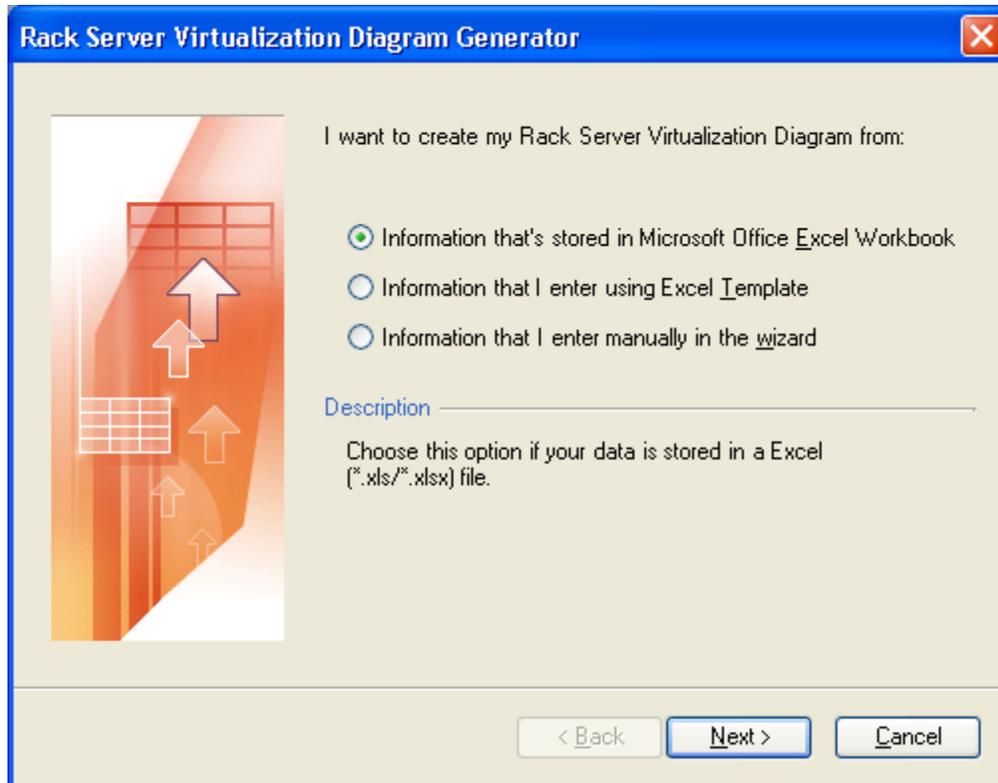


Figure 13: Source to create Virtualization Diagram.

3.2.1 Selecting the Microsoft Office Excel Workbook

1. Select the **Information that's stored in Microsoft Office Excel Workbook** and click **Next**.
2. Select an **Excel Workbook** that consists of Colo, Rack and Server details.

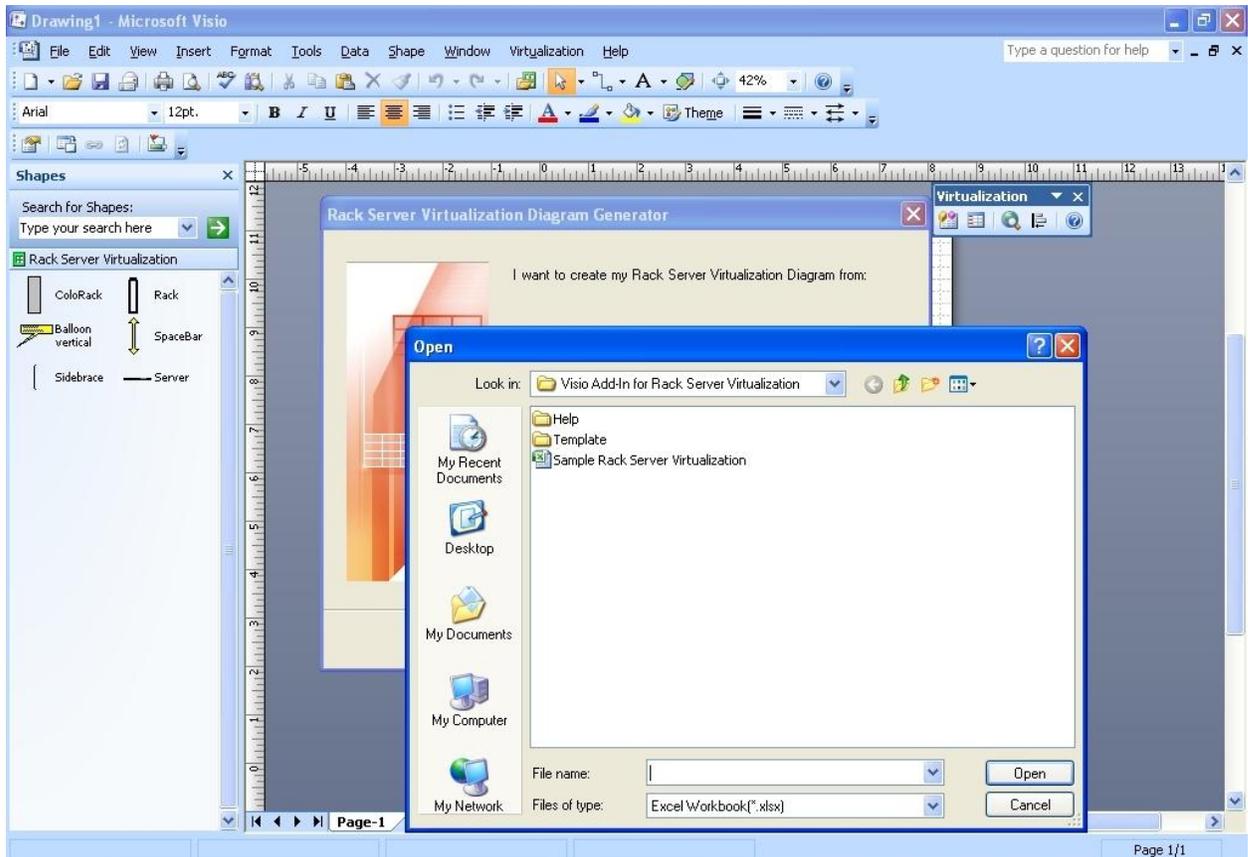


Figure 14: Select Excel Workbook.

3. Click **Open**.
4. Select a worksheet each for Colo, Rack and Server to get their details. Click **Next**.

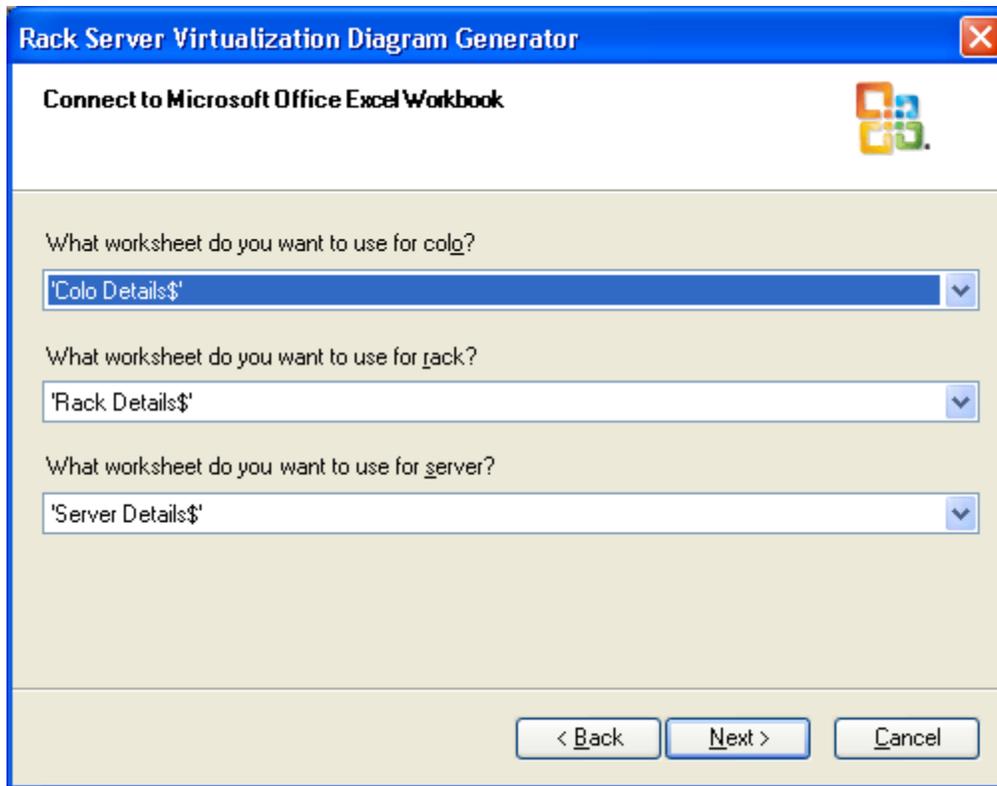


Figure 15: Select Worksheets.

5. All the columns of the Worksheet will be displayed in the combo boxes.
6. Select columns for **Server** details corresponding to the **Shape Field**.

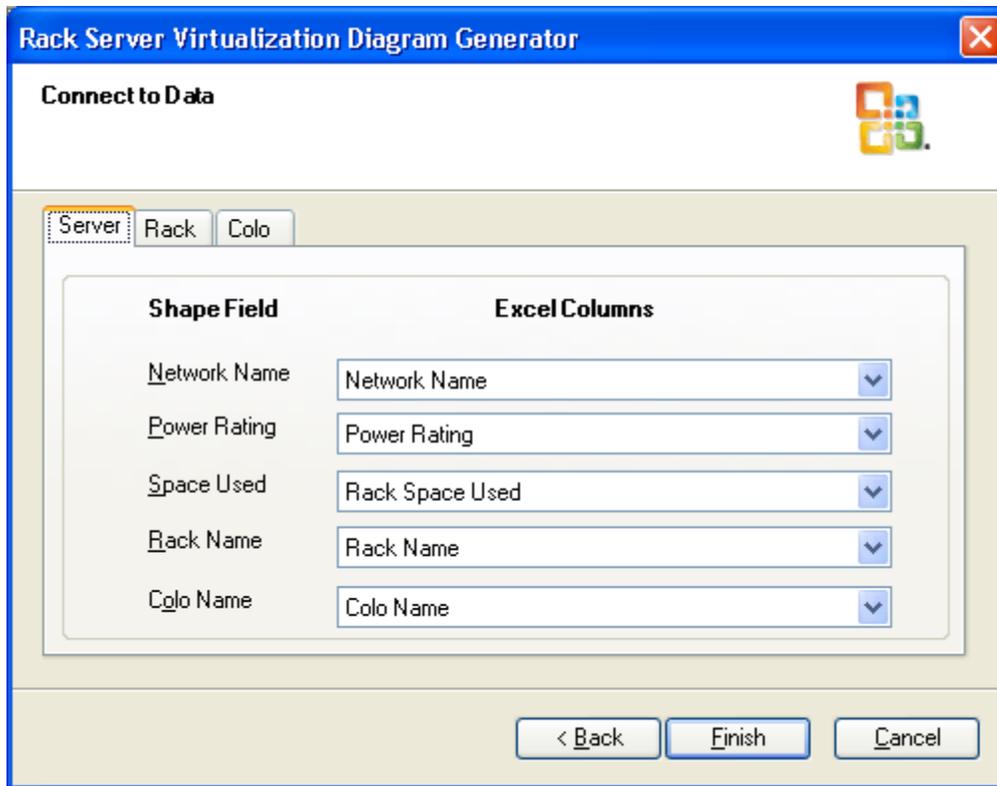


Figure 16: Select Columns for Server Details.

7. Select columns for **Rack** details corresponding to the **Shape Field**.

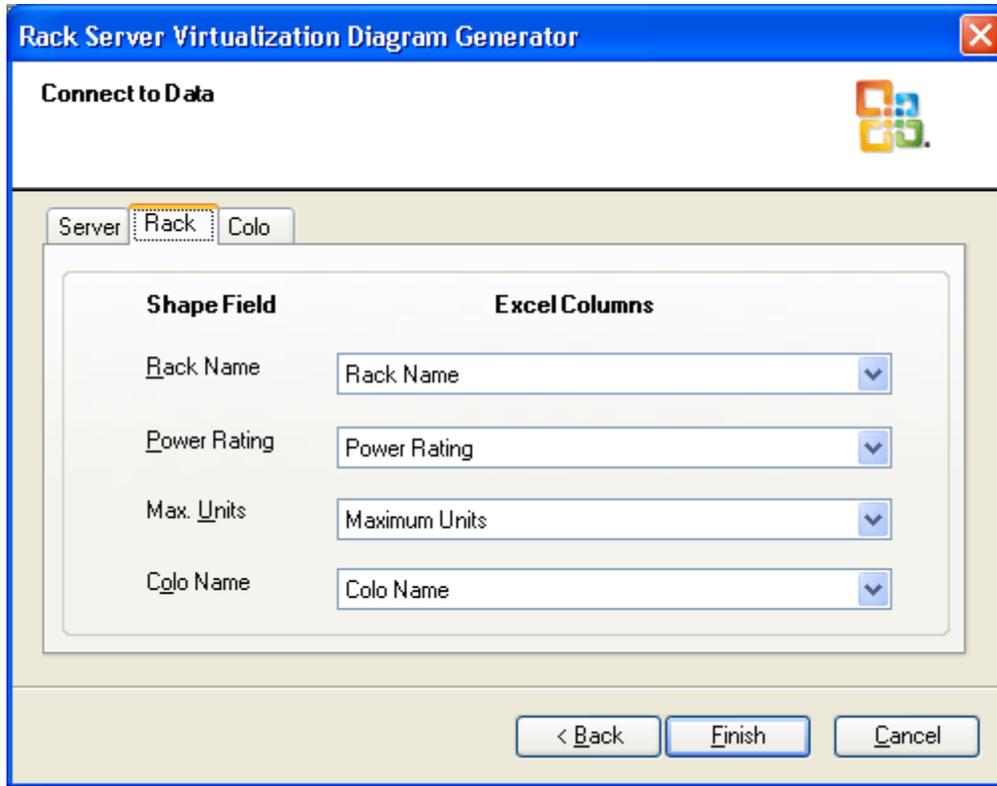


Figure 17: Select Columns for Rack Details.

8. Select columns for **Colo** details corresponding to the **Shape Field**.

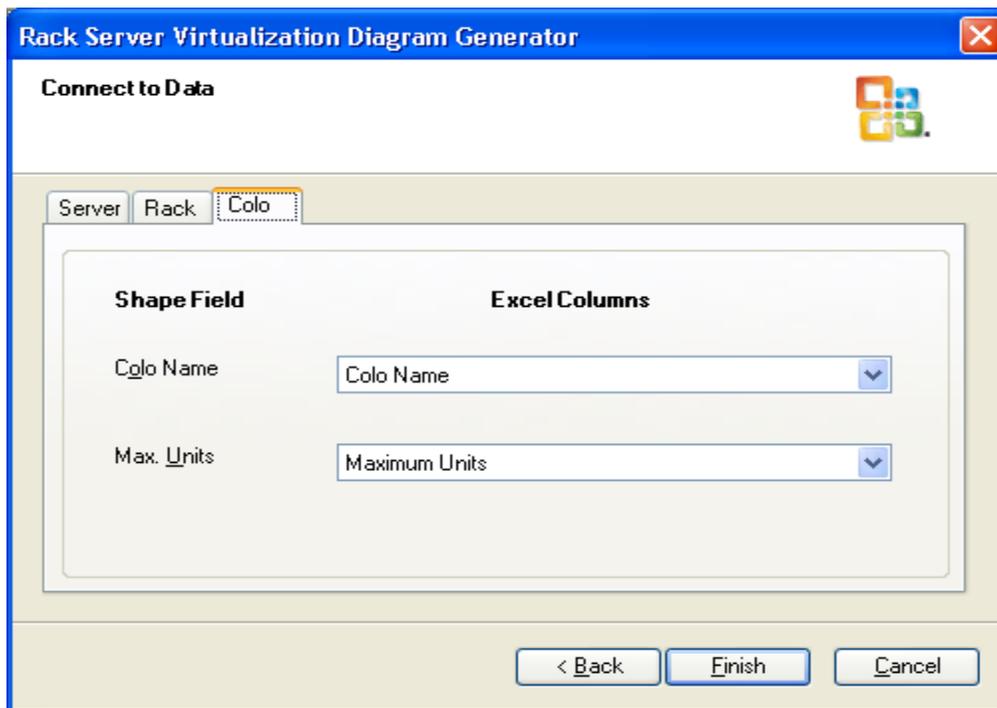


Figure 18: Select Columns for Colo Details.

9. Click **Finish**. A diagram will be auto generated for all the colo(s) present in the Excel Worksheet. This diagram consists of all the racks present in the Colo.

Note: There will be a separate page created for each Colo.

Note: Each page can contain up to 120 racks, if the number of racks exceed 120, a new page will be added to the drawing.

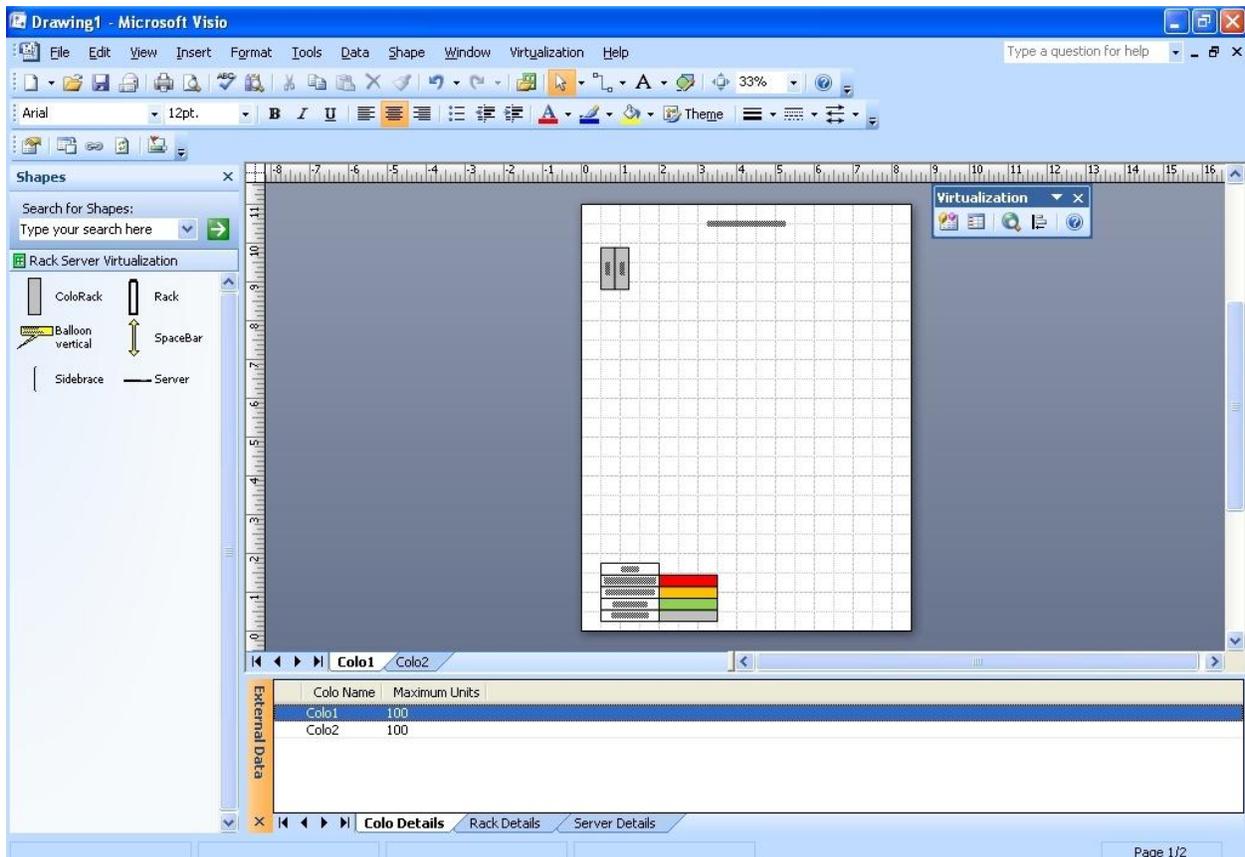


Figure 19: Auto-Generated Diagram of the Colo Racks.

3.2.2 Using the Microsoft Office Excel Template

1. On **Import Data Wizard**, Select **Information that I enter using Excel Template** and click **Next**.
2. Create a new excel file.

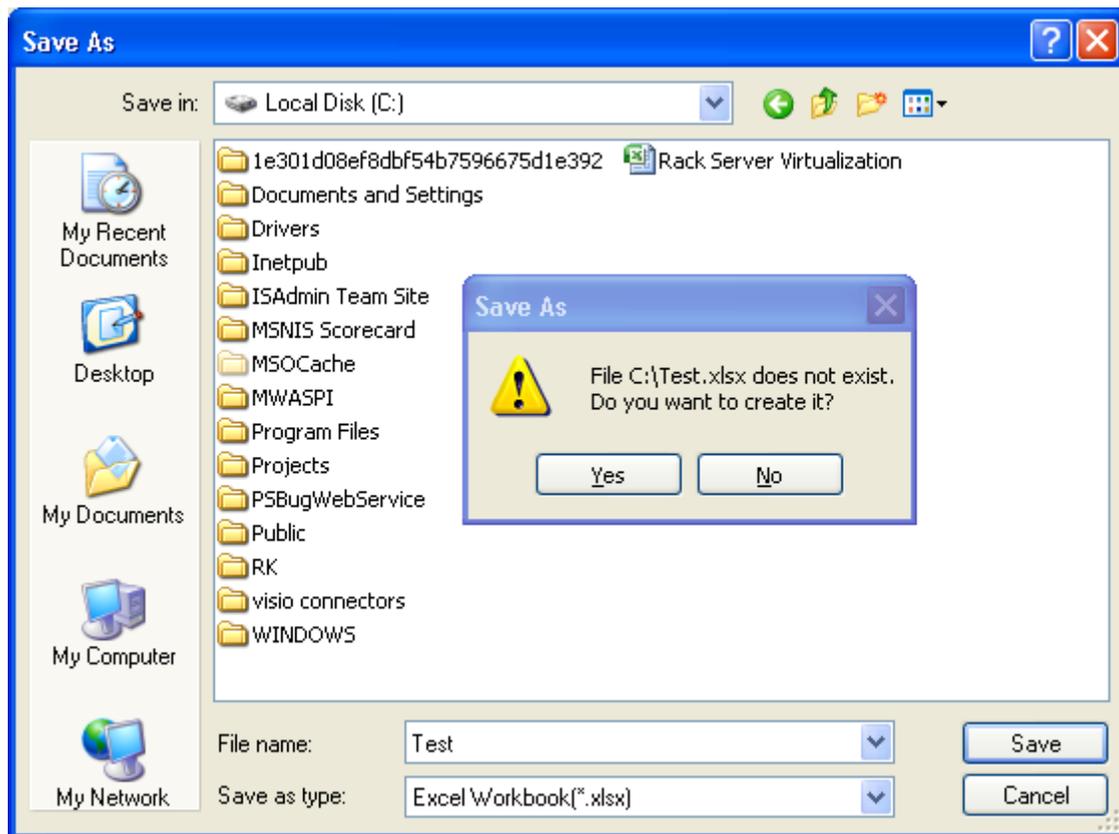


Figure 20: Create excel workbook.

3. A message is displayed to create a new File if the File name entered by you does not exist. Click **Ok**. A new File will be created at the selected location.

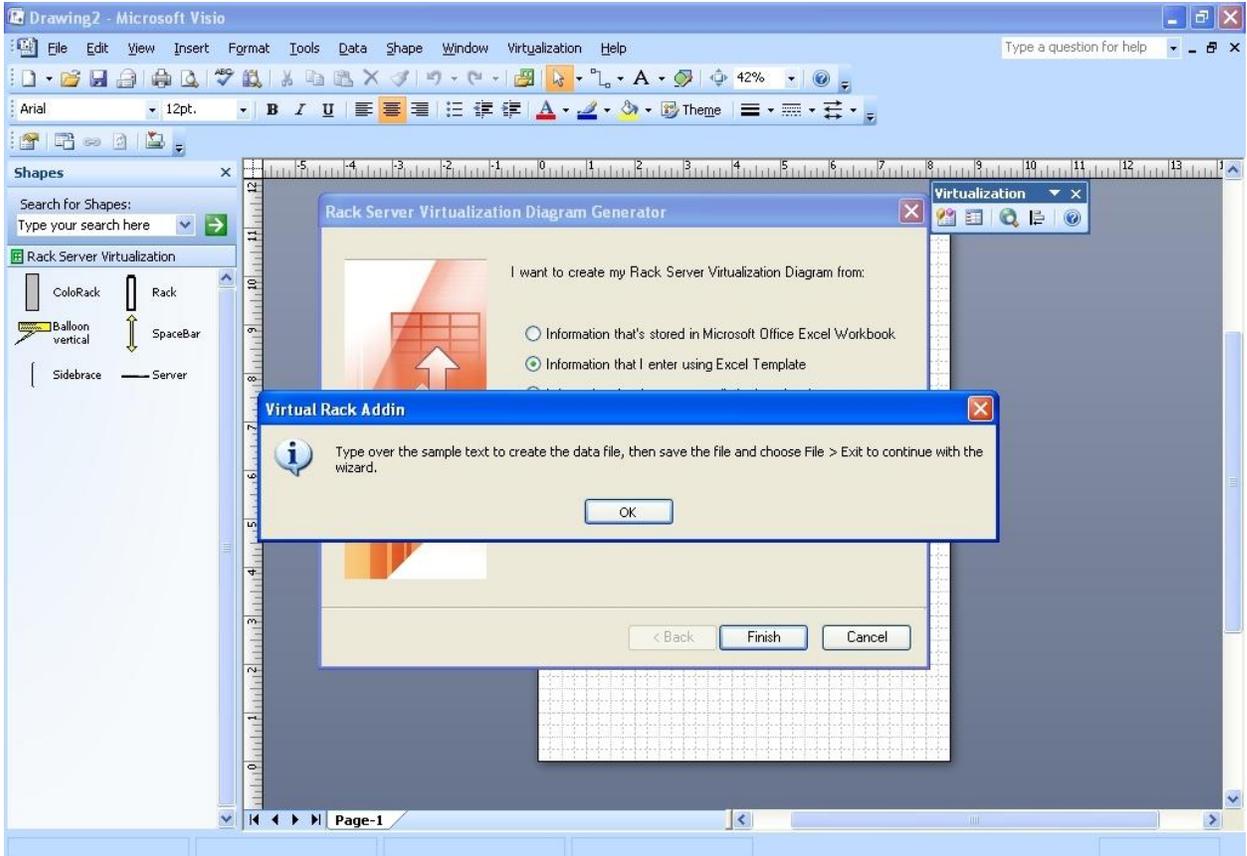


Figure 21: Type Over Sample Data Message box.

4. The new Excel file created with the template will open. Type the Colo, Rack and Server details. Click **Save**. Click **File > Exit**.

The screenshot shows an Excel spreadsheet with the following data:

| | A | B | C | D | E |
|----|--------------|---|-----------|--------------|-----------------|
| 1 | Network Name | Specify the Server Name for each Rack in the Colo | Colo Name | Power Rating | Rack Space Used |
| 2 | Server1 | | Colo1 | 100W | 3U |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |

Figure 22: Sample Excel Template.

- As user exits the Excel file, a diagram is auto generated for all the colo(s) present in the Excel Workbook. This diagram consists of all the racks present in the Colo.

Note: There will be a separate page created for each Colo.

Note: Each page can contain up to 120 racks, if the number of racks exceed 120, a new page will be added to the drawing.

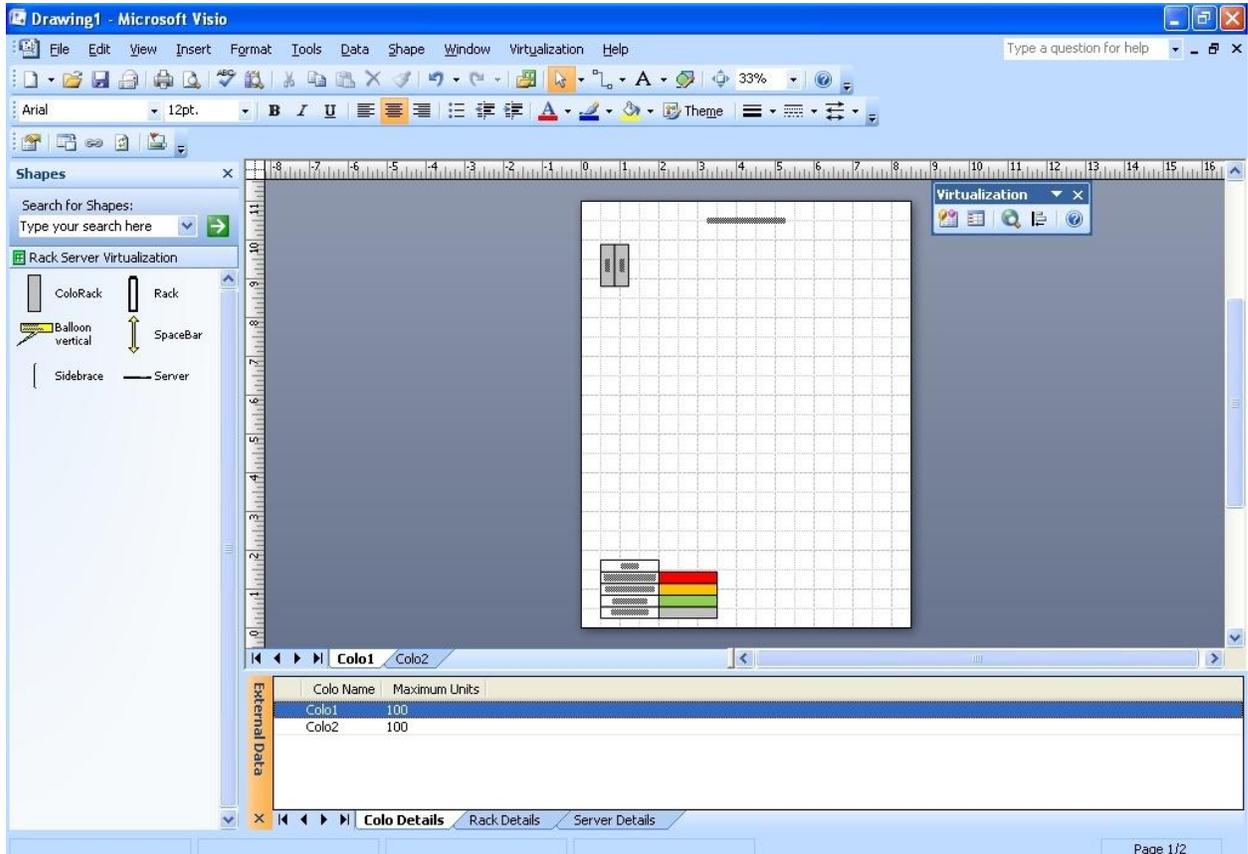
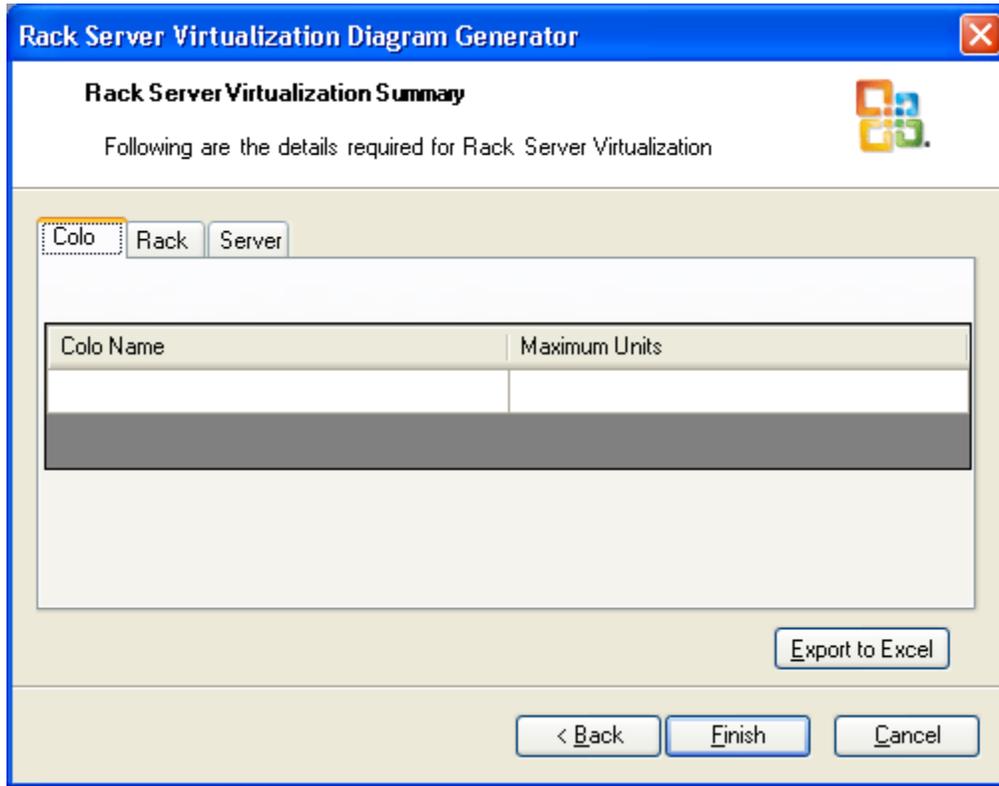


Figure 23: Auto-Generated Diagram of the Colo Racks.

3.2.3 Using the Manual Wizard

1. On **Import Data Wizard**, Select the **Information that I enter manually in the wizard** and click **Next**.
2. Enter the **Colo Name** and **Maximum Units**.



The screenshot shows a software window titled "Rack Server Virtualization Diagram Generator". The main heading is "Rack Server Virtualization Summary". Below the heading, it says "Following are the details required for Rack Server Virtualization". There are three tabs: "Colo", "Rack", and "Server". The "Colo" tab is selected. Below the tabs is a table with two columns: "Colo Name" and "Maximum Units". The table is currently empty. At the bottom right of the table area is a button labeled "Export to Excel". At the bottom of the window are three buttons: "< Back", "Finish", and "Cancel".

| Colo Name | Maximum Units |
|-----------|---------------|
|-----------|---------------|

Figure 24: Colo Details.

3. Select **Rack** tab. Enter the **Rack Name**, **Colo Name**, **Power Rating**, **Maximum Units** for each rack.

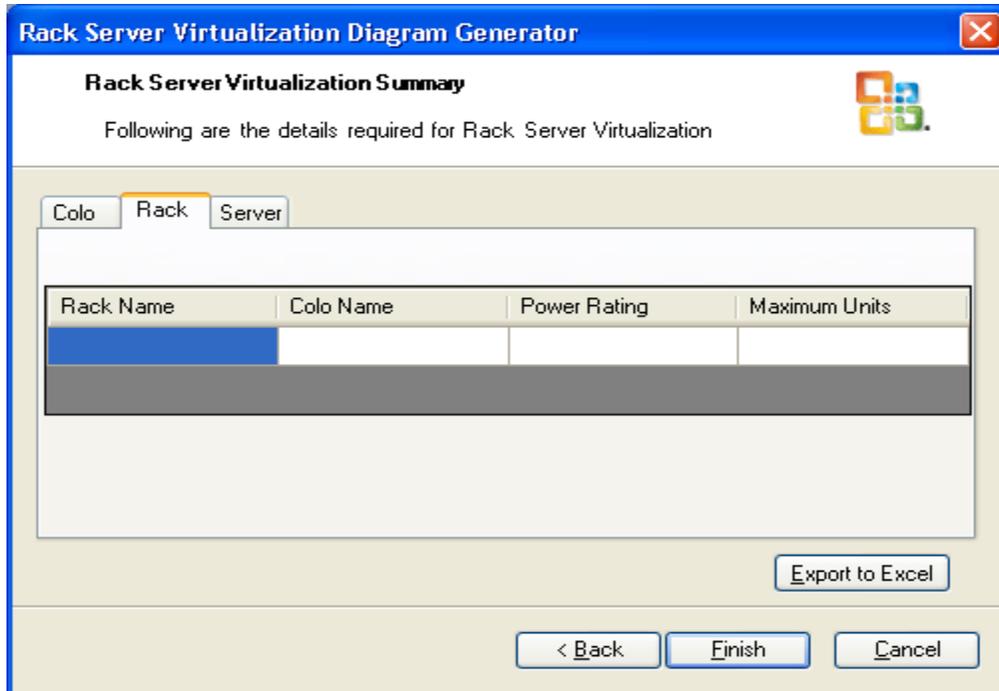


Figure 25: Rack Details.

4. Select **Server** tab. Enter the **Network Name, Rack Name, Colo Name, Power Rating, Rack Space Used** details.

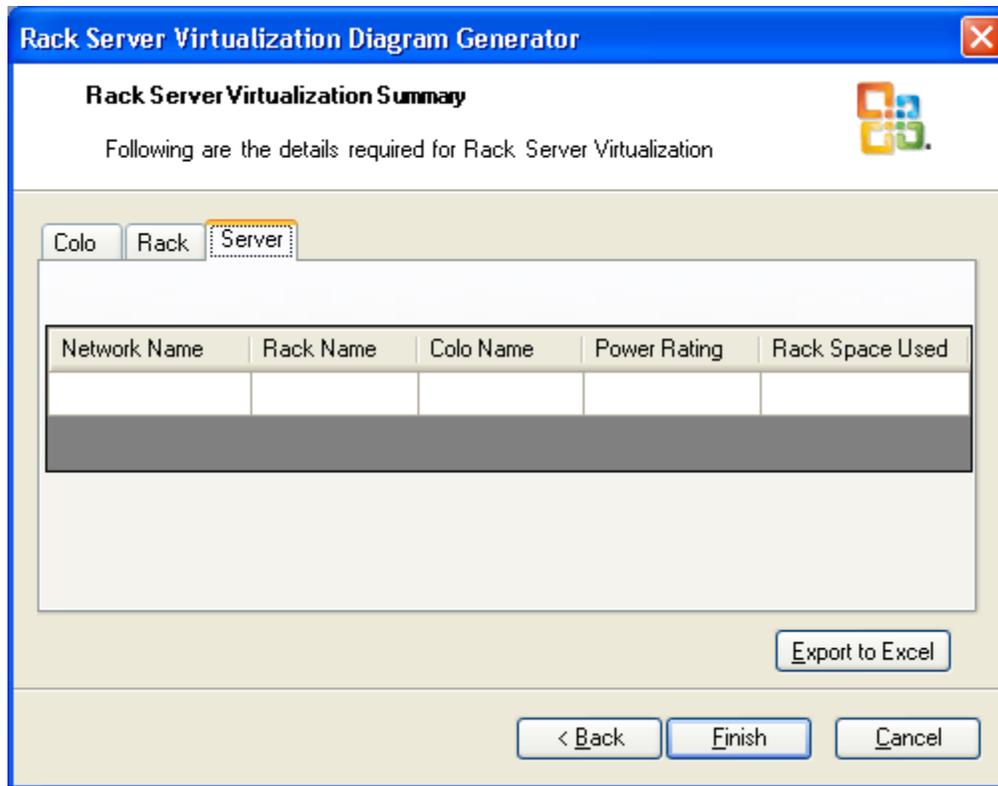


Figure 26: Server Details.

5. After filling the data, Click **Finish**.
6. Once the user clicks **Finish**, a diagram is auto-generated for all the colos provided in the data grid by the user. This diagram consists of all the racks present in the Colo.

Note: There will be a separate page created for each Colo.

Note: Each page can contain up to 120 racks, if the number of racks exceed 120, a new page will be added to the drawing.

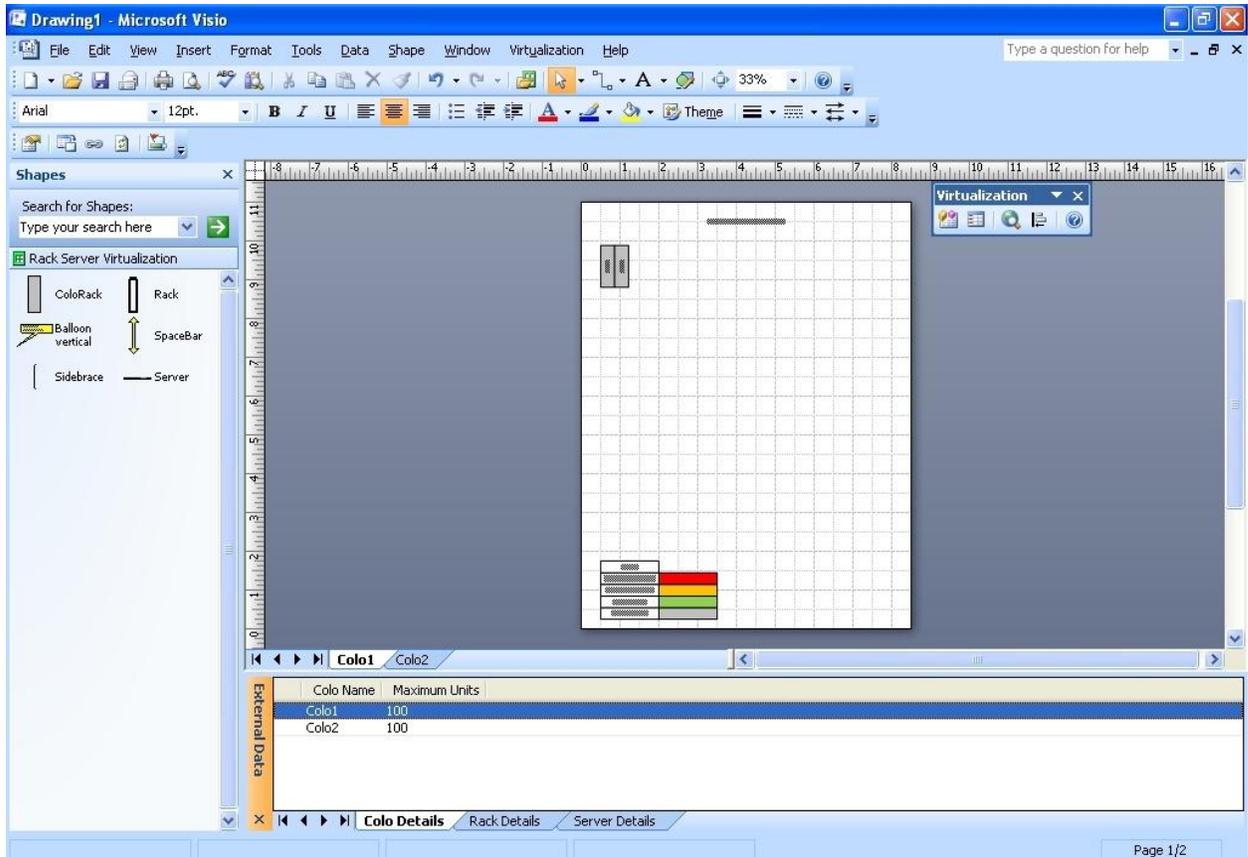


Figure 27: Auto-Generated Diagram of the Colo Racks.

7. User can Export the data entered into the manual entry data grid onto an excel spreadsheet.
 - a. Click **Export to Excel**.
 - b. **Save As** dialog will open.
 - c. Select the desired path.

Note: Default path will be Installation Path.
Default file name will be **RackServerVirtualization-Data-Time.xlsx**.

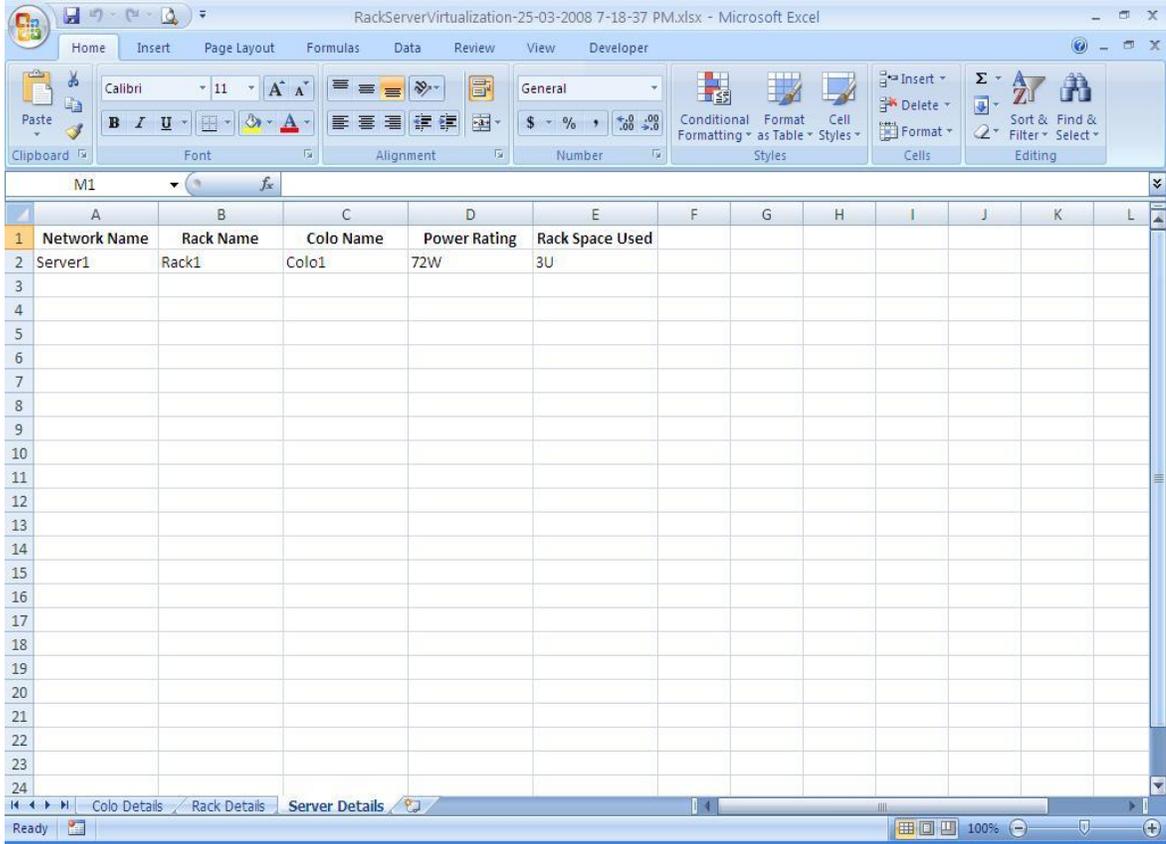


Figure 28: Format of Excel saved

3.3 View Rack Details

User can view the details of each Rack in the diagram created as:

1. Hover the cursor on any of the Rack shape of the colo, a smart tag will be visible. The smart tag consists of menu items **View Rack Details**, **Analyze Rack** and **Rack Virtualization**. Rack Virtualization will be disabled until Analyze is performed.
2. Click **View Rack Details**.

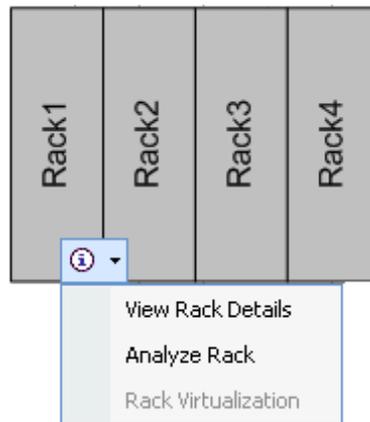


Figure 29: Smart Tag to View Rack Details.

3. A new page will be created comprising of detailed diagram of that particular Rack. The diagram shows the detailed information of the Rack and the servers consisted by the Rack. The Shape Data consists of Rack's Name, Power Rating, Maximum Units and Server's Power Rating, Rack Space Used etc.

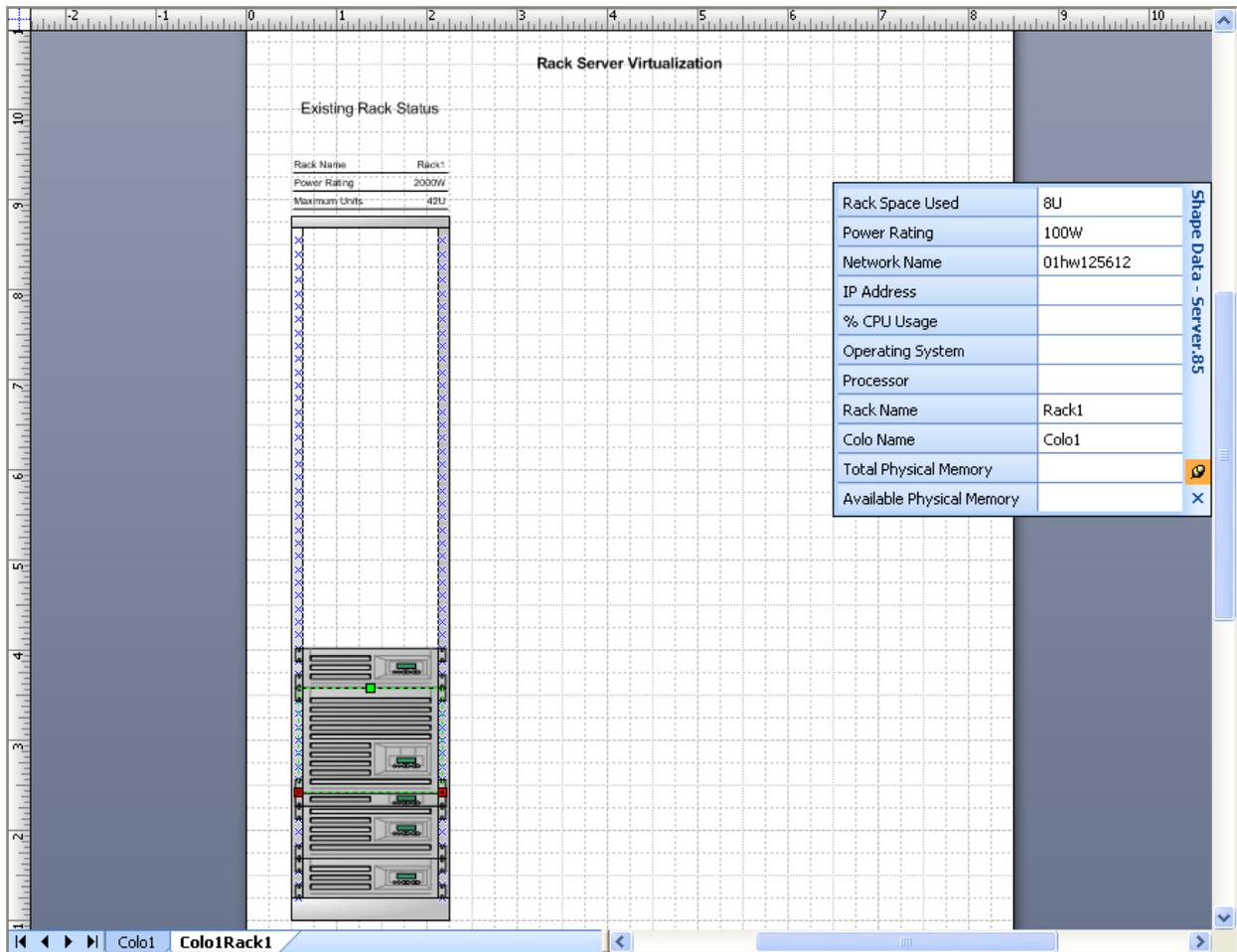


Figure 30: View Rack Details.

4. Select the **Rack Shape**, Right click **Properties**. User can view the Rack shape data.

| Shape Data - ColoRack | |
|-----------------------|-------|
| Rack Name | Rack1 |
| Power Rating | 2000W |
| Maximum Units | 42U |
| Colo Name | Colo1 |

Figure 31: Rack Shape Properties.

5. Select the **Server shape**, Right click **Properties**. User can view the Server shape data.

| Shape Data - Server | | × |
|---------------------------|-----------|---|
| Rack Space Used | 3U | |
| Power Rating | 100W | |
| Network Name | localhost | |
| IP Address | | |
| % CPU Usage | | |
| Operating System | | |
| Processor | | |
| Rack Name | Rack1 | |
| Colo Name | Colo1 | |
| Total Physical Memory | | |
| Available Physical Memory | | |

Figure 32: Server Shape Properties.

3.4 Configuration

Before starting the Analyze process, user can configure the mode of fetching the data of Rack-Server for Rack Server Virtualization. The Add-in uses CPU utilization as the factor to consider a Server as Virtualizable.

1. Click **Configure** from the **Virtualization** Menu or click **Configure** icon from **Virtualization Add-in** toolbar.

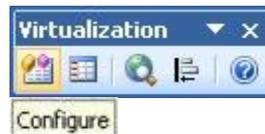


Figure 33: Configure Button on Toolbar

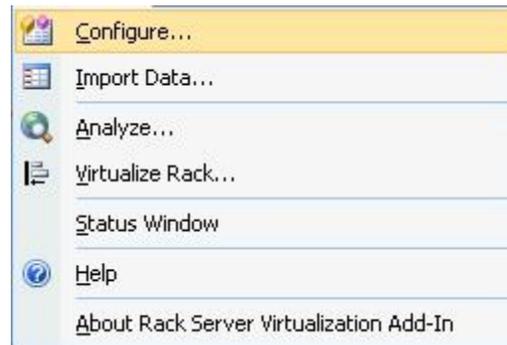


Figure 34: Configure Menu

2. User can choose between the **Current CPU Utilization** (CPU Utilization at that instance) or **CPU Utilization of servers over a period of time**.

Note: **Current CPU Utilization** uses the **WMI** query to fetch the data from Rack Servers and **CPU Utilization for Duration** uses the **Operations Manager SDK** to get the data. By default, Current CPU Utilization is selected.

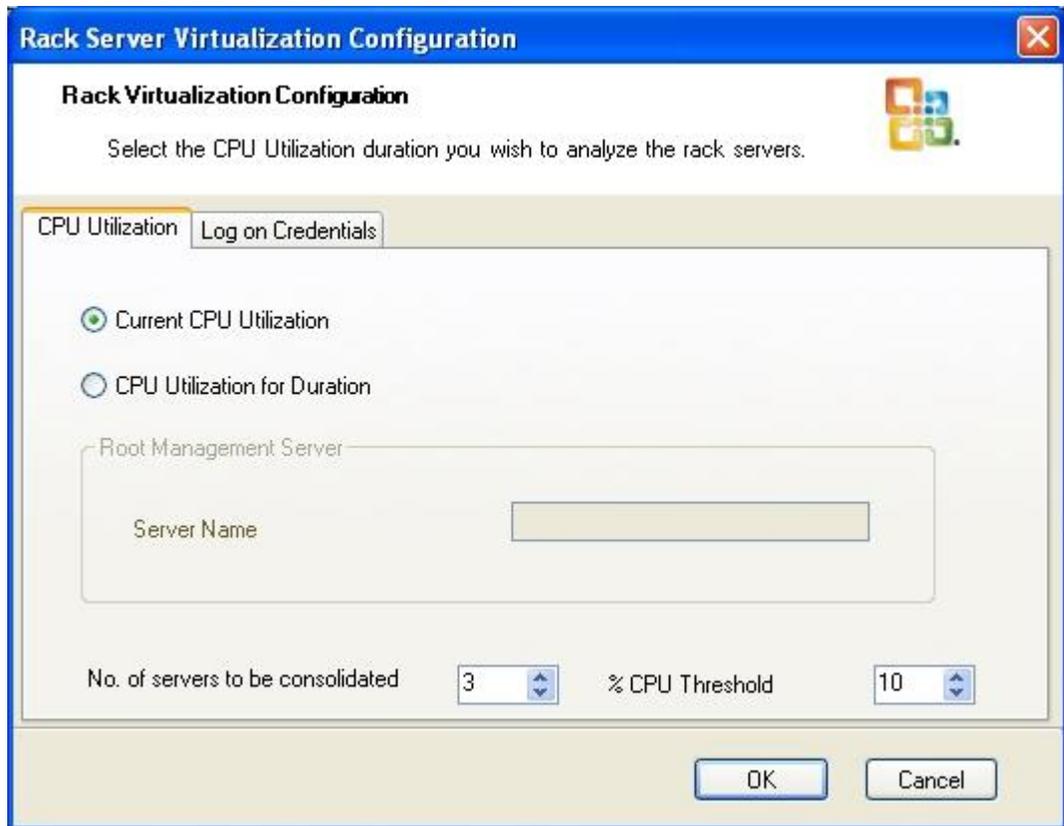


Figure 35: Configuration: Current CPU Utilization.

3. Select **CPU Utilization for Duration**. Type a valid **Operations Manager Root Management Server Name**. If the server is unavailable user will be prompted for an error.

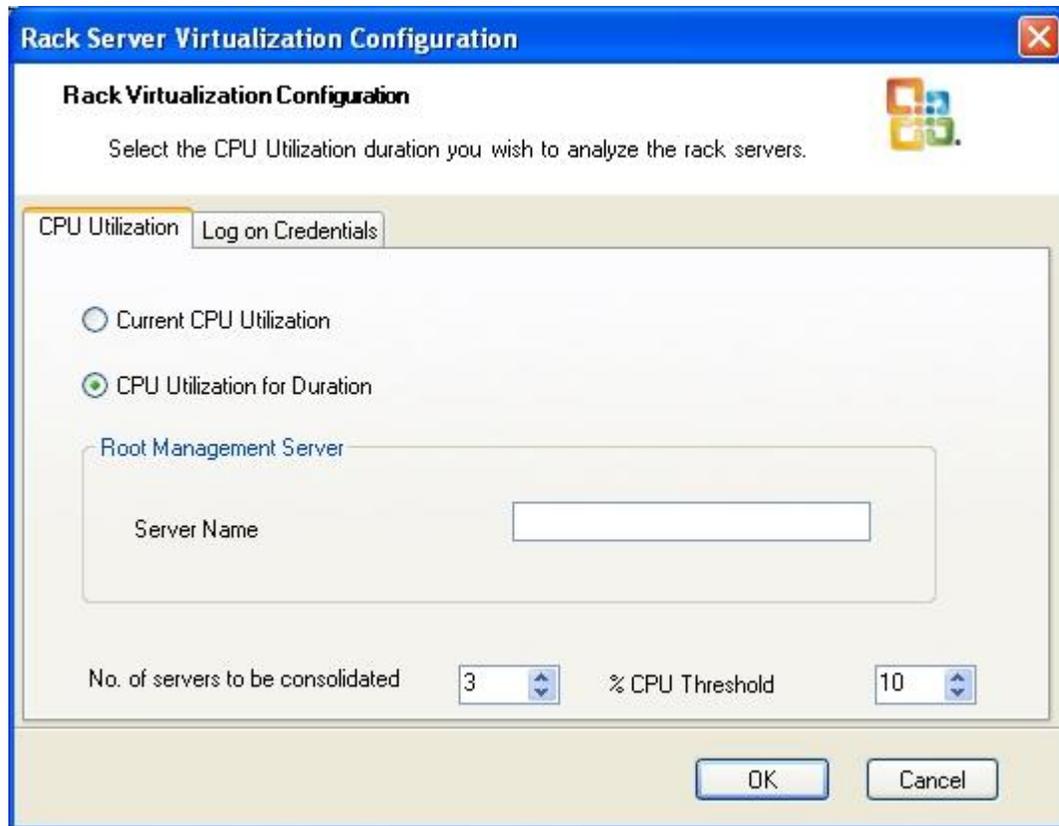


Figure 36: Configuration: CPU Utilization for Duration.

4. User can set the value of **number of servers to be consolidated** (default 3) for virtualization.
5. User can change the **% CPU Threshold** value (default 10%) below which servers can be considered as underutilized and can be proposed for Virtualization (consolidated into other Servers of the same Rack).
6. User can change the **Logon credentials** (default **Windows Authentication.**)

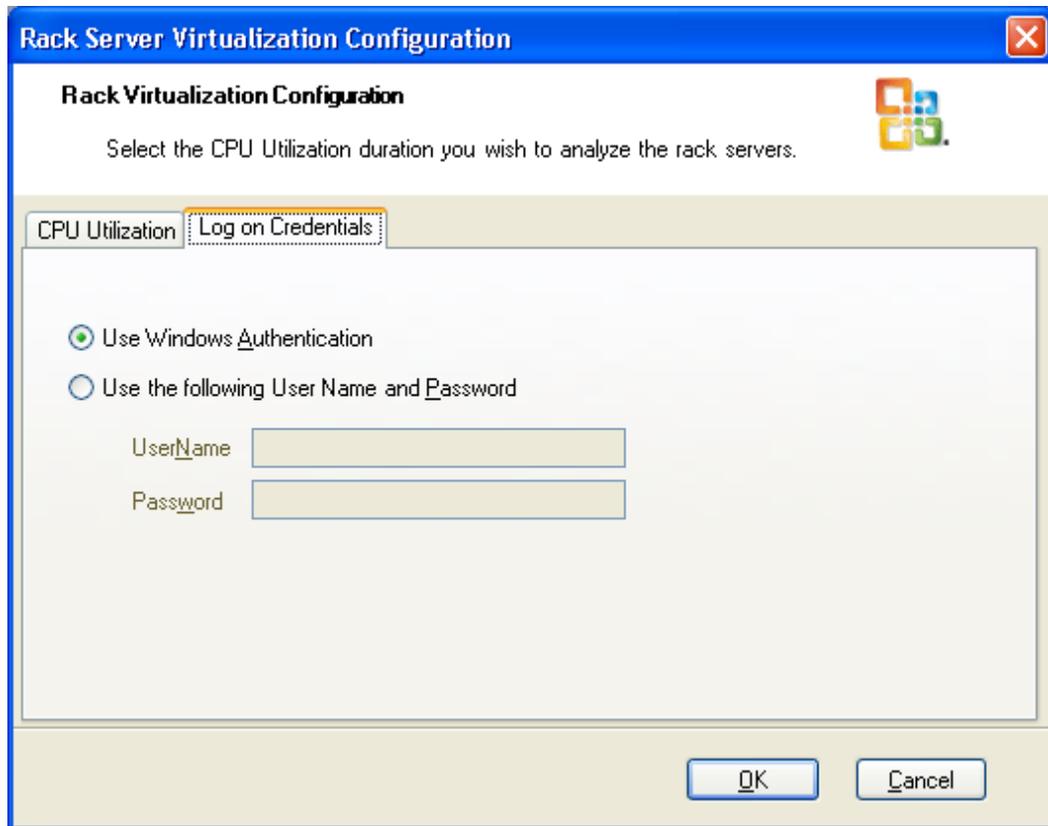


Figure 37: Configuration: Logon Credentials.

3.5 Analyze

1. Users can Analyze Rack from **Virtualization Menu --> Analyze** or from **toolbar Analyze icon**.
2. If user hover the cursor over the Rack shape of the colo, a smart tag will be visible. The smart tag consists of menu items **View Rack Details, Analyze Rack** and **Rack Virtualization**. Rack Virtualization will be disabled until Analyze is performed.

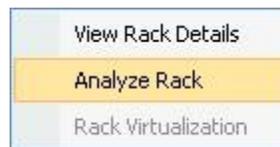


Figure 38: Smart Tag to Analyze Rack.

3. By selecting the **Analyze Rack** menu item from the **smart tag** menu will start analyzing the Rack of the Colo. User can also **select multiple Racks** and click **Analyze Rack**, will analyze multiple racks.
4. If user selects the **Analyze** from **Virtualization menu** or **toolbar**, will analyze all the Racks of the drawing.
5. A Status window is displayed showing the status of the Analysis. User can cancel the Analyze process by clicking **Cancel**.

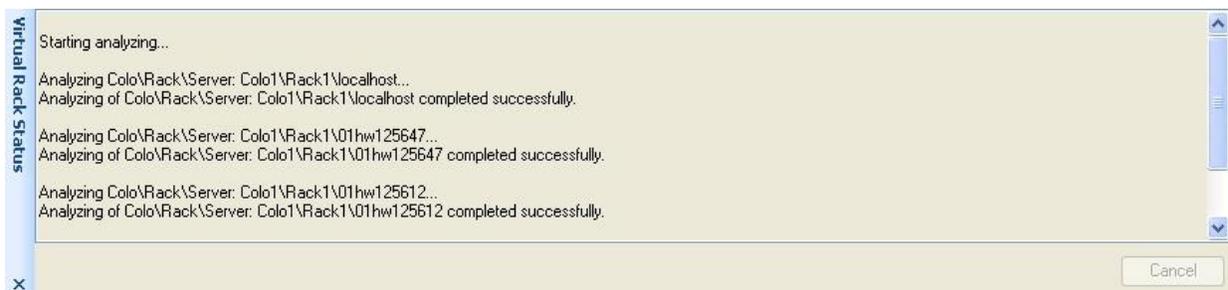


Figure 39: Virtualization Status Window.

6. Color of Racks will change after analyzing based on the color codes in [Legend](#). Rack will be considered as underutilized or over utilized based on the % CPU Usage of Servers in the Rack. If any Server in a Rack has CPU Utilization below threshold value it will be considered as underutilized and the Rack is considered as Virtualizable.

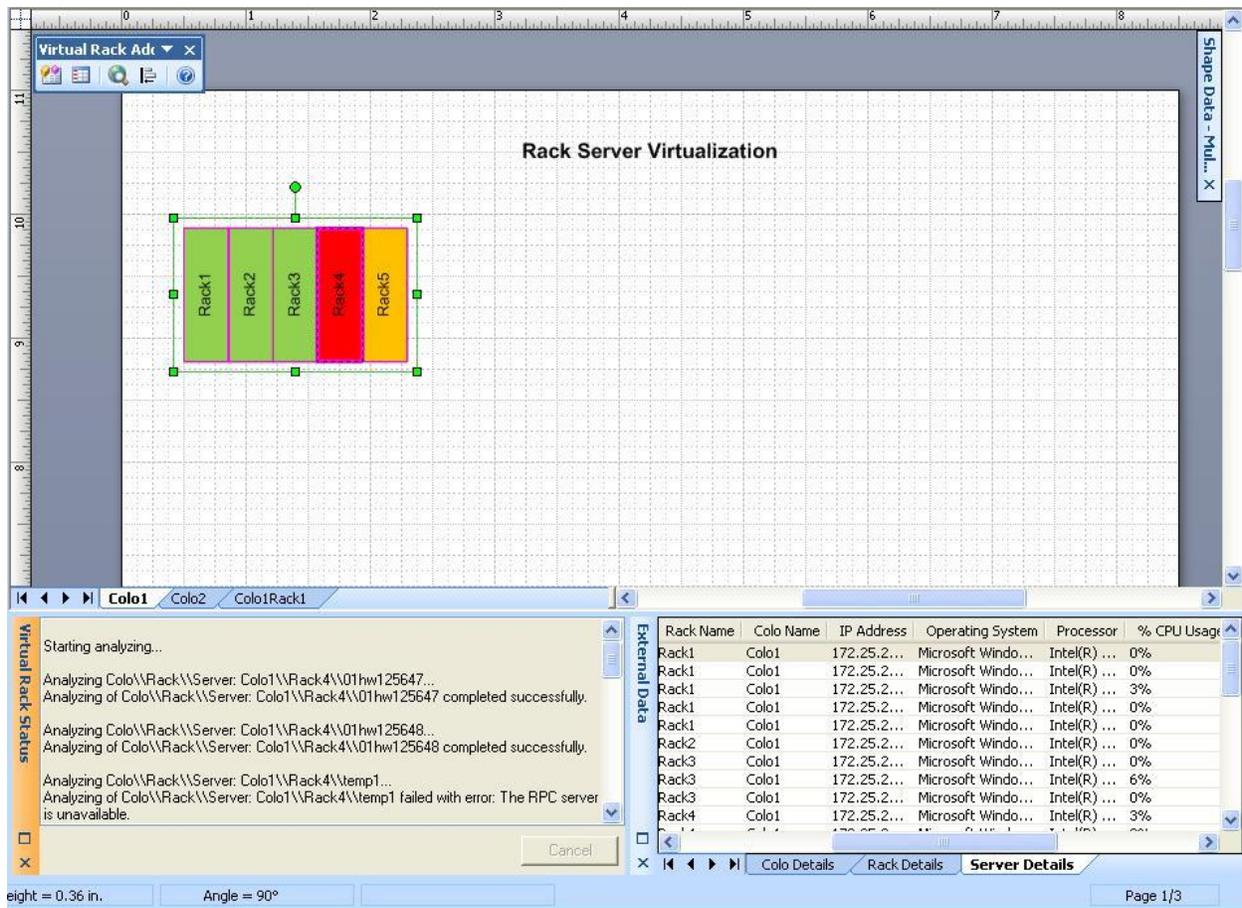


Figure 40: Rack Color After Analyzing.

7. User can close the Status Window and Open it again from the **Status Window** in **Virtualization** Menu in the Visio Menu Bar.

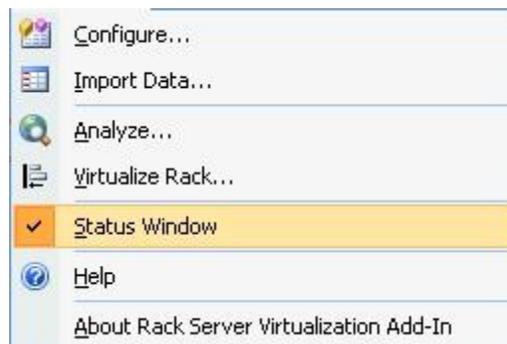
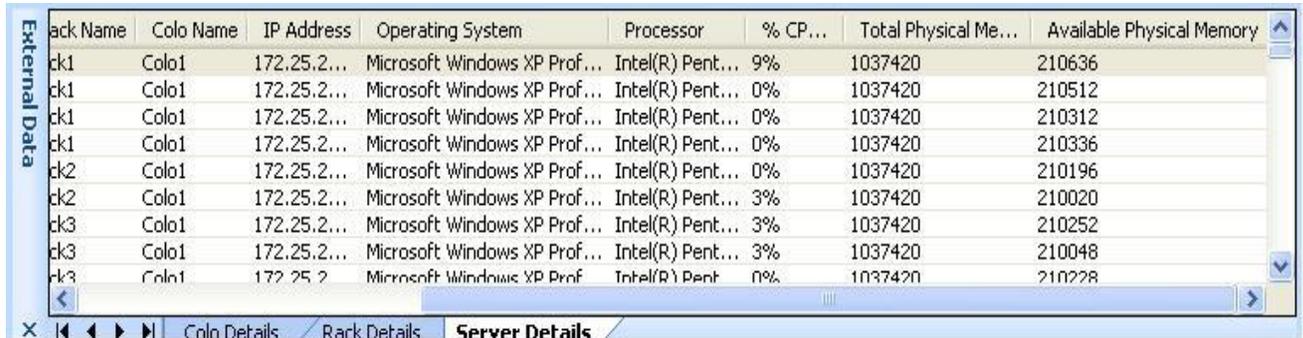


Figure 41: Status Window Menu Item.

3.6 Virtualization

This section describes the Virtualization of Rack Servers:

1. After successfully completing the **Analyze**, the External Data window adds the fetched IP Address, Operating System, Processor, % CPU usage, Total Physical Memory, Available Physical Memory details of the analyzed servers.



The screenshot shows a window titled 'External Data' with a table of server information. The table has columns for Rack Name, Colo Name, IP Address, Operating System, Processor, % CPU usage, Total Physical Memory, and Available Physical Memory. The data is as follows:

| Rack Name | Colo Name | IP Address | Operating System | Processor | % CPU usage | Total Physical Memory | Available Physical Memory |
|-----------|-----------|-------------|------------------------------|------------------|-------------|-----------------------|---------------------------|
| ck1 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 9% | 1037420 | 210636 |
| ck1 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 0% | 1037420 | 210512 |
| ck1 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 0% | 1037420 | 210312 |
| ck1 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 0% | 1037420 | 210336 |
| ck2 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 0% | 1037420 | 210196 |
| ck2 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 3% | 1037420 | 210020 |
| ck3 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 3% | 1037420 | 210252 |
| ck3 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 3% | 1037420 | 210048 |
| ck3 | Colo1 | 172.25.2... | Microsoft Windows XP Prof... | Intel(R) Pent... | 0% | 1037420 | 210228 |

Figure 42: External Data.

2. Users can **View the Rack Details** of the **analyzed racks** from smart tag on a Rack shape.

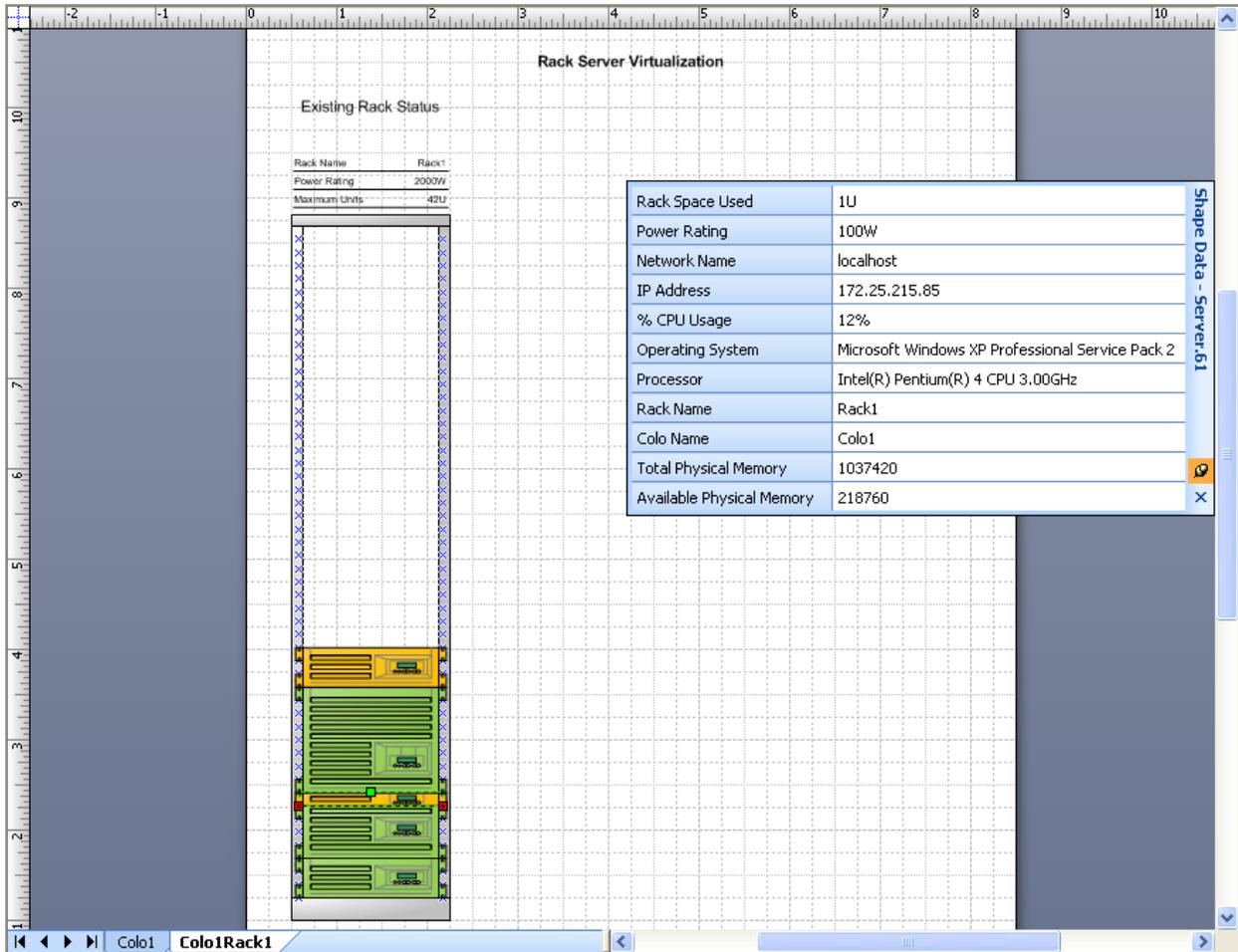


Figure 43: View Rack Details of the Analyzed Racks.

3. After Analyze, smart tag menu item Rack Virtualization will be enabled. Click **Rack Virtualization**.

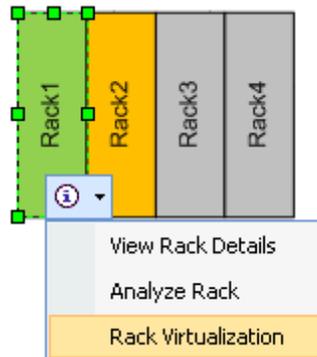


Figure 44: Smart Tag to Rack Virtualization.

- Proposed Rack Status after Virtualization will be displayed along with the Existing Rack Status. The after virtualization diagram shows the **Power Drop** and **Rack Space Saved**.

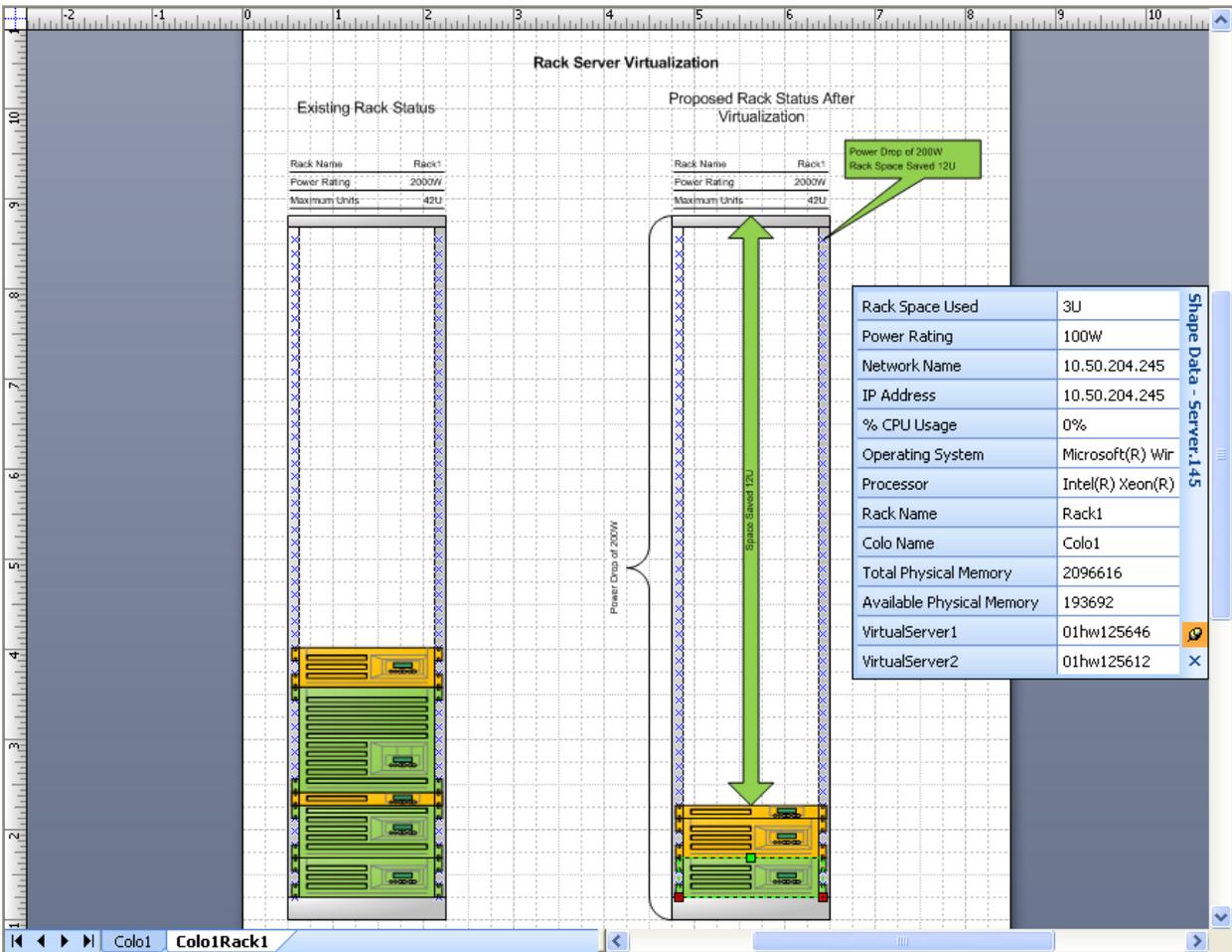


Figure 45: Virtualization of Servers.

- User can see the **Virtual Servers consolidated** under a **Physical Server**. Select the Physical Server, right click **Properties, Virtual Server Shape Field**.

| Shape Data - Server.153 | | × |
|---------------------------|---------------------|---|
| Rack Space Used | 3U | |
| Power Rating | 300W | |
| Network Name | 01hw125647 | |
| IP Address | 172.25.214.69 | |
| % CPU Usage | 0% | |
| Operating System | Microsoft Windows : | |
| Processor | Intel(R) Pentium(R) | |
| Rack Name | Rack1 | |
| Colo Name | Colo1 | |
| Total Physical Memory | 1037420 | |
| Available Physical Memory | 310468 | |
| VirtualServer1 | localhost | |
| VirtualServer2 | 01hw125612 | |

Figure 46: Virtual Servers in Shape Data Window.

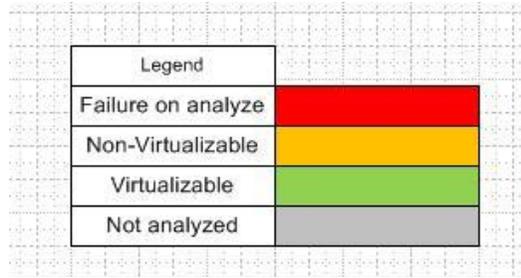
4. Consolidation Criteria

Consolidation is done based on the following parameters according to the priority as below:

1. **Power Rating:** The server with higher Power Rating is considered to be a better candidate than server with lower Power Rating.
2. **Rack Space Used:** A Server that occupies more space is merged into the Server that occupies less space to minimize the space occupied by the Servers within a Rack.
3. **CPU Utilization:** A Server with lower CPU Utilization is merged into the Server with higher CPU Utilization.
4. **Physical Memory:** Server with lower Physical Memory will be merged into the Server with higher Physical Memory.

5. Legend Definition

The legend is defined according to the analysis done.

A table with a grid background. The table has two columns. The first column contains text labels, and the second column contains colored squares corresponding to the labels. The labels are: Legend, Failure on analyze, Non-Virtualizable, Virtualizable, and Not analyzed. The colors are: red, orange, green, and grey respectively.

| Legend | |
|--------------------|--------|
| Failure on analyze | Red |
| Non-Virtualizable | Orange |
| Virtualizable | Green |
| Not analyzed | Grey |

Figure 47: Legend Definition.

Grey: No analysis is done.

Green: Virtualizable (Rack contains a server whose CPU Utilization is less than the threshold.)

Orange: Non-Virtualizable (Rack contains no server whose CPU Utilization is less than the threshold.)

Red: There is an error while analyzing the Servers in the Rack.

6. Troubleshooting

This section describes the errors user may get.

6.1 Error while Importing Data

Error scenario 1:

On the Import wizard form of Rack Server Virtualization when user selects **Information that's stored in Microsoft Office Excel Workbook** option, click **Next** then the following error appears:



Error Description:

The selected option requires either Microsoft Office Excel 2003 or Microsoft Office Excel 2007 installed on the user machine.

Error scenario 2:

On Select columns form of Rack Server Virtualization when user selects the default text for Excel columns **<Select a column name>** and click **Finish** then the following error appears:



Error Description:

The selected item is not a valid excel column name. This text is selected by default when the form loads and Excel Column name doesn't match with the Shape Field.

Error scenario 3:

On the Manual data entry form of Rack Server Virtualization when grid columns get blank and doesn't have any value and user clicks **Finish**, then the following error appears:

"Column Name" column cannot be blank. Please provide any value.

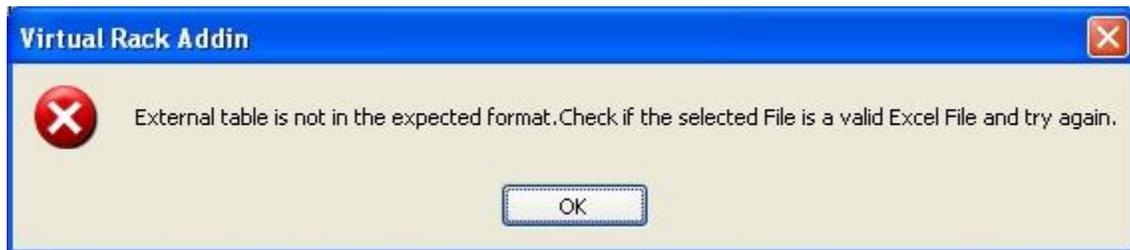


Error Description:

Data Grid columns cannot contain blank values. User has to provide some values for rack diagram to be created.

Error scenario 4:

On the Import Wizard form of Rack Server Virtualization when the user selects existing **Microsoft Office Excel Workbook** option or **Microsoft Office Excel Template** and click **Next**, file dialog opens and select an invalid excel, then the following error appears:



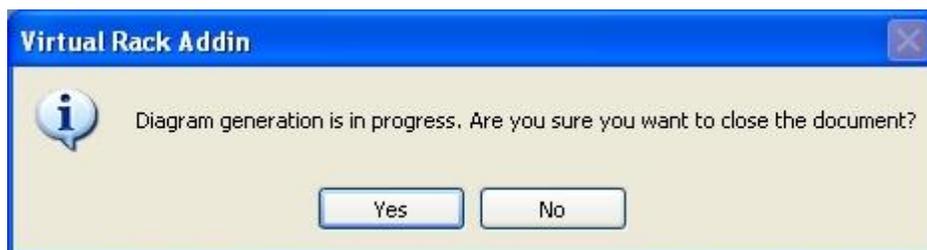
Error Description:

The input excel used for these options must be a valid excel file.

6.2 Error while Diagram Generation

Error scenario 1:

During the diagram generation process when the user tries to close the document on which the diagram is being generated. The following error message appears.

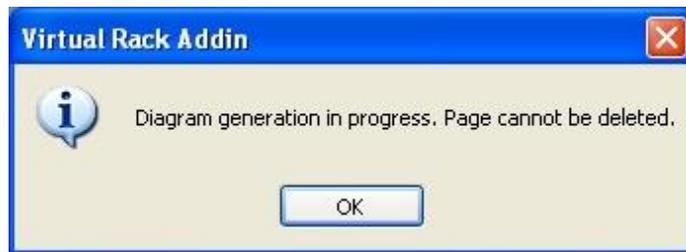


Error Description:

The diagram generation process needs to be terminated if user wants to close the document. Click **Yes** to stop the diagram generation process and close the document, click **No** to continue the diagram generation without closing the document.

Error scenario 2:

During the diagram generation process user tries to delete a page from the document on which the diagram is being generated, the following error message appears.



Error Description:

Page cannot be deleted until the diagram generation process is complete.

Error scenario 3:

During the diagram generation process, if user tries to delete shape(s) from the document on which the diagram is being generated, the following error message appears.

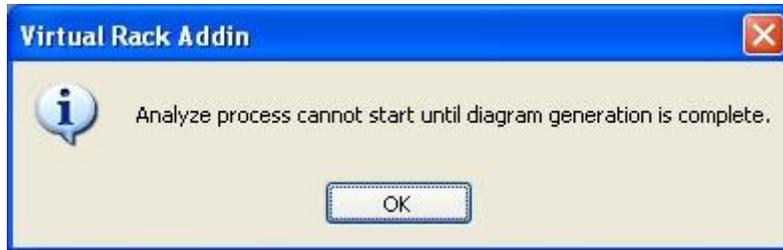


Error Description:

Shape(s) cannot be deleted until the diagram generation process is complete.

Error scenario 4:

During the diagram generation process user tries to Analyze the Racks either from **Virtualization Menu** or **toolbar**, the following error message appears.

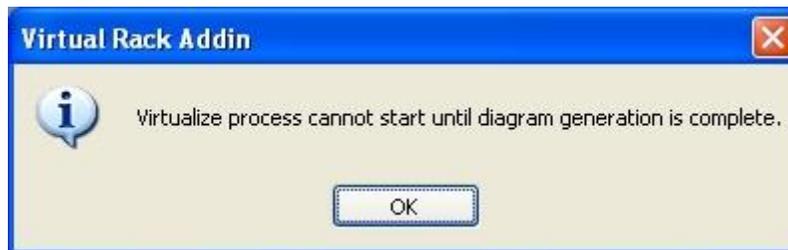


Error Description:

Analyze cannot be started until the diagram generation process is complete.

Error scenario 5:

During the diagram generation process user tries to Virtualize the Racks either from **Virtualization Menu** or **toolbar**, the following error message appears.



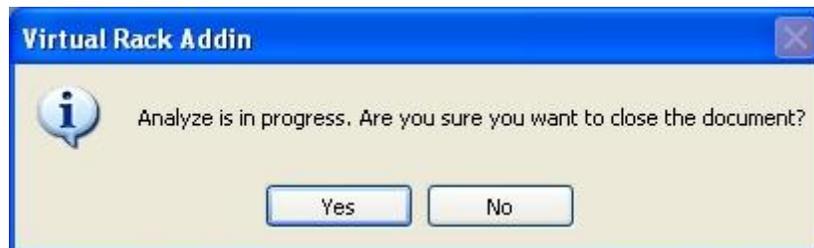
Error Description:

Virtualize cannot be started until the diagram generation process is complete.

6.3 Error while Analyze

Error scenario 1:

During the Analyzing process user tries to close the document on which the analyzing is in progress. The following error message appears.

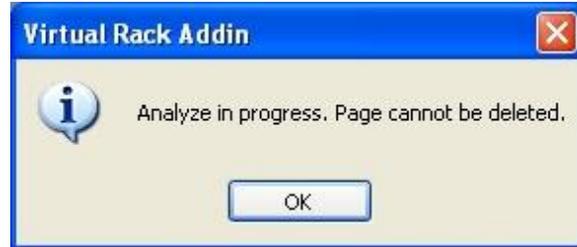


Error Description:

The analyzing process need to be terminated if user wants to close the document. Click **Yes** to stop the analyzing process and close the document, click **No** to continue the analyzing without closing the document.

Error scenario 2:

During the analyzing process user tries to delete a page from the document on which the analyzing is in progress. The following error message appears.



Error Description:

Page cannot be deleted until the analyzing process is complete.

Error scenario 3:

During the analyzing process user tries to delete shape(s) from the document on which the analyzing is in progress. The following error message appears.

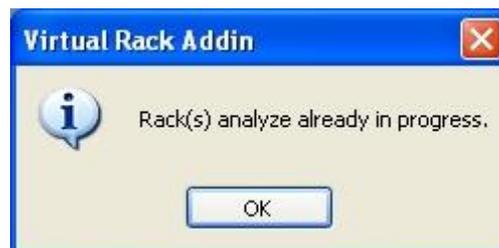


Error Description:

Shape(s) which are present on Colo pages cannot be deleted until the analyzing process is complete.

Error scenario 4:

During the Analyzing process user tries to start the Analyzing process again for the same document. The following error message appears.

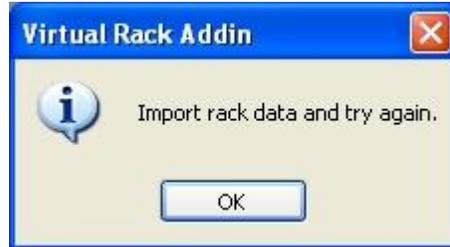


Error Description:

Only one analyzing session is allowed at any given point of time for a particular document. To restart analyzing process, stop the current analyzing session and start new analyzing session.

Error scenario 5:

Before the diagram generation process starts, user tries to Analyze the Rack shapes on the document. The following error message appears.



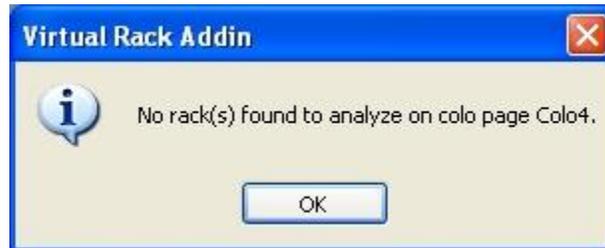
Error Description:

Analyze process cannot start before diagram generation is performed.

Error scenario 6:

After diagram generation process completed, user deletes all the Rack shapes from the page and tries to Analyze the Rack shapes on the document. The following error message appears.

No rack(s) found to analyze on colo page "Page Name"



Error Description:

Rack shapes are required for Analyze even if the data record set (Rack Details) is present.

Error scenario 7:

After diagram generation process completed, when user tries to Analyze, the following error message appears.

No such host is known. Please provide a valid Operations Manager Root Management Server name.



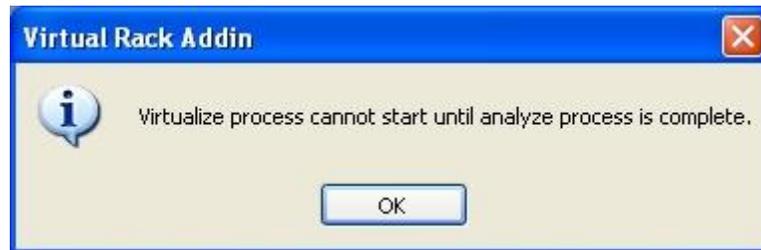
Error Description:

A valid Operations Manager Root Management Server name is required to perform analysis. Please ask your administrator for a valid Operations Manager Root Management Server name.

6.4 Error while Virtualize

Error scenario 1:

During the Analyze process user tries to virtualize the Rack shape(s) either from **Virtualization Menu** or **toolbar**, the following error message appears.

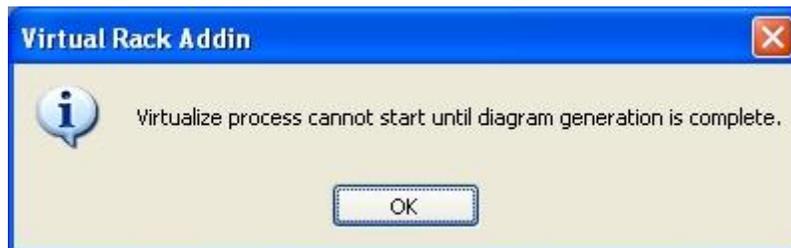


Error Description:

Virtualize cannot be started until the Analyze process is complete.

Error scenario 2:

During the diagram generation process user tries to virtualize the Racks either from **Virtualization Menu** or **toolbar**, the following error message appears.



Error Description:

Virtualize cannot be started until the diagram generation process is complete.

Error scenario 3:

User tries to Virtualize without selecting a Rack shape, the following error message appears:



Error Description:

Selection of a rack is must for virtualization.

Error scenario 4:

Before diagram generation process is performed user tries to virtualize the Rack shape(s) either from **Virtualization Menu** or **toolbar**, the following error message appears:

Data record set "Record Set Name" not found.

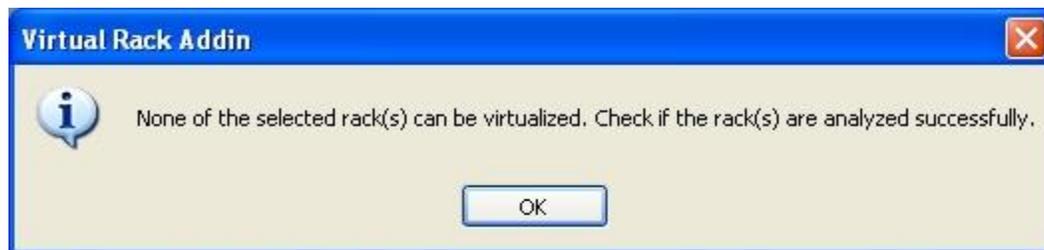


Error Description:

Virtualize process cannot start before Diagram generation is performed.

Error scenario 5:

Before Analyze process is performed user tries to virtualize the Rack shape(s) either from **Virtualization Menu** or **toolbar**, the following error message appears:



Error Description:

Virtualize process cannot start before Analyze is performed.

6.5 Error while Exporting Data Grid data to Excel

Error scenario 1:

On Rack Virtualization Summary form user clicks on **Export to Excel** and the following error message appears:



Error Description:

To save the data to an Excel File, installs either Microsoft Office Excel 2003 or Microsoft Office Excel 2007.